

ICT AND EDUCATIONAL PURPOSE IN THE ENGLISH SECONDARY SCHOOL: USING BELL'S CULTURAL CONTRADICTIONS TO CHALLENGE TECHNO-ECONOMIC JUSTIFICATIONS OF ICT USE

Submitted for the degree of
Doctor of Philosophy



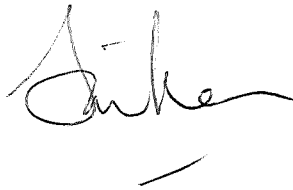
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DECLARATION

I declare that this thesis is a presentation of my original research work and has not previously been submitted for a degree from any university. To the best of my knowledge, this thesis does not contain any material previously published or written by another person except where duly acknowledged in the text.

Word count (excluding appendices and bibliography): 92,138 words

A handwritten signature in black ink, appearing to read 'Saima', with a horizontal line underneath.

Saima Rana

ABSTRACT

The prominence of ICT in English Secondary schools has increased enormously in the last fifteen years under the New Labour administration. As a background to this, schools have historically been justified either in terms of vocational or non-vocational objectives, captured in Oakeshott's contesting metaphors of schools as markets or as monasteries. ICT became a high profile and very expensive part of a general educational reform policy engaged with these contested objectives.

The thesis surveys and critiques government ICT policy in English Secondary schools between 1995-2010, through situated case studies of policy processes, asking what ideas are driving the reforms and how these frame the purpose of schools. The central contribution of this thesis is to reveal how ICT educational policy in this sector has been constructed and positioned through the application of critical discourse analysis (CDA). An original feature of this CDA is the use of Daniel Bell's theory of tripartite Axial Realms to identify neglected discourses. The main findings are that there is a dominant techno-economic discourse and that axial principles from the cultural and political realms are largely invisible.

This research places the construction of educational ICT policy reform discourse at the centre of important contemporary questions about the purpose of Secondary schools, in particular, debates about market and visions of schooling. I use Bell to reconceptualise the educational purpose of ICT, showing that it can be reconstructed in terms of Bell's three realms, the techno-economic, the political and the cultural, rather than assuming that only the techno-economic is needed to explain it. The implications of this are that vocational justifications alone need not and should not drive ICT educational reform, nor educational reform generally, and that reintroducing political and cultural principles alongside techno-economic ones would benefit ICT policy.

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ACKNOWLEDGEMENTS

I would like to thank and acknowledge the following people who have assisted and supported me with my research.

First of all, I would like to thank and offer my sincerest gratitude to my supervisors Dr Martin Oliver and Dr Niall Winters who have supported me throughout my research. I would not have been able to complete this thesis without their continuous patience, knowledge, time, guidance, support, good teaching, academic experience and warm encouragement. Thank you for ploughing through several preliminary versions of my text, making critical suggestions, posing challenging questions, giving me the confidence to explore my research interests and the guidance to avoid getting lost in my exploration.

I wish to thank my dear friend Richard Marshall, for helping me get through the difficult times, and for all the emotional support, camaraderie, entertainment, and caring he provided. Throughout my research he has provided enthusiasm, inspiration, advice and very good company. Thank you.

I am grateful also to all the participants who took part in this study. Unfortunately they must remain anonymous but I thank them all for their invaluable contributions.

I would like to thank my family for encouraging me and endlessly listening to me. They have been a constant source of emotional and moral support during my doctoral studies and this thesis would certainly not have existed without them. Thank you to my wonderful siblings, my sister Naheed for her support, prayers and always being there, my brother Khuram for believing in me and caring and a very special thanks to my brother Faisal for his endless encouragement, support and his absolute confidence in me.

And last but by no means least I thank my parents for their endless patience and love and always supporting me throughout all my studies. To them I dedicate this thesis.

CHAPTER 1:

INTRODUCTION

1.1 INTRODUCTION

This chapter introduces the themes of the thesis. I begin by discussing why I embarked upon this piece of work. I then explain the research context (English Secondary schools between 1995 and 2010, in which unprecedented investment in ICTs took place). This will be related to work in the USA by Larry Cuban who described enthusiasts for the new reform agenda and for new technologies, specifically Information Communication Technology (ICT), as *'techno-enthusiasts'* or *'techno-reformists'*. I use a theoretical structure developed by the sociologist Daniel Bell, applying it to this specific educational context as part of my analysis of the educational ICT policy discourse developed at this time. Out of this come the main research questions that shall be explored in this work and their significance. This chapter ends with an overview of the thesis.

1.2 RATIONALE

This thesis is a reaction to the unprecedented investment in English Secondary schools' ICT resources since the 1980's. The story of ICT's introduction into English Secondary schools has involved large amounts of money and resources coupled with studies that question the effectiveness of this policy investment.

Introduced for the first time as part of the National Curriculum in 1988 as part of Design and Technology, Information Technology (IT) later developed into ICT. It is now a statutory non-core foundation subject taught in all the Key stages as a discrete subject. An incoming New Labour Government in 1997 set challenging targets for the use of ICT in a consultation paper. In this was proposed a National Grid For Learning, which would create, *'A mosaic of inter-connecting networks and education services based on the Internet which will support teaching, learning,*

training and administration in schools, colleges, universities, libraries, the workplace and homes' (DfEE, 1997a).

Since then there has been huge capital investment in schools. Since 1997, £1.367 billion has been invested in Primary and Secondary schools from grants from Standards Funds alone by 2002 (DfES/Becta 2002, p2). Matched funding from Local Education Authorities (LEAs) has meant that levels of investment in this introduction of ICT into schools is estimated to have been about £1.8 billion over a seven year period up to 2002. Since 1999 the £250 million New Opportunities Fund (NOF) initiative has also been awarded for training teachers and librarians in schools to use ICT.

ICT was well established in these schools by 2003. The computer to pupil ratio was 1:5.4. Average numbers of computers per school had increased from 100.9 in 1998 to 192.7. 82% of teachers were reported as feeling confident using ICT (compared to 61% in 1998) (DfES/Becta 2003). The majority of secondary schools had well-equipped ICT suites providing 20-25 networked workstations, intranets, connections and 'clusters' or stand-alone machines around the school. However, despite increased access to technology both at school and home, most teachers still used ICT resources in less than half of their lessons and generally preferred to rely on paper-based sources for lesson planning. The most common use of ICT across all subjects at this time was using the Internet for research (DfES/Becta 2003; DfES 2003c).

43.3% of secondary teachers had access to an electronic whiteboard at this point; 27.3% used it regularly. 64.5% of secondary school teachers had access to personal email at school. There is a close correlation between availability and regular use. Only 23.1% of secondary teachers make regular use of IT curriculum-related software. Yet despite this, the claims of the techno-reform policy agenda continued to focus on what will be achieved in the future. The policy agenda claimed that further investment in ICT in Secondary schools in England would bring about a significant impact. For example, the DfES wrote that investing in ICT in Secondary schools would ensure that:

'ICT makes a significant contribution to teaching and learning across

all subjects and ages, inside and outside the curriculum; ICT is used to improve access to learning for pupils with a diverse range of individual needs, including those with SEN and disabilities; ICT is used as a tool for whole-school improvement; ICT is used as a means of enabling learning to take place more easily beyond the bounds of the formal school organisation and outside the school day; and ICT capabilities are developed as key skills essential for participation in today's society and economy' (DfES/Becta 2003)

This perceived gap between the aims and ideals of the techno-reformist agenda and its continually deferred failure to realise the potential of ICT raised questions as to whether there were problems with the discourse. If the investment and the training was successfully happening then something else had to be preventing the predicted success.

This led me to think about techno-reformist policy in terms of a discourse that might possibly be defective, as I began to start reading the literature critiquing this policy discourse. Out of this came questions as to the origins of the discourse, and questions about whether the discourse contained 'contradictions' which meant that its promises were not just deferred for the moment but were permanently deferred.

Larry Cuban (2003) had written extensively about the way promises made on behalf of technology for improving schools had failed. I had read Diane Coyle's (1997) book about the impact of ICT on the 'weightless economy', which summarised a vision that seemed to connect closely with the vision driving the 'techno-reform' agenda in Secondary schools, one where information, services and positional goods become the new sources of capital made possible by the new ICTs.

From this it was a small move to thinking about the claims being made for this new wired, weightless economy. I began to read about the originators of the ideas of Post-Industrialism and globalisation that Coyle had summarised. I read Bell and noted the centrality he gave to information and computers in his construct of Post-Industrialism that he labelled the 'Information Society'.

Bell's rebuttal of Lasch in the 'New York Review of Books' (1974a) struck me as making a surprising, important and yet overlooked claim for his theory: that he was restricting his claim about the 'Information Society' to a distinct realm rather than

claiming it would revolutionise the whole of society. It said:

'...it is useful, analytically, to divide society into three realms: the social structure (which comprises the economic-technical-industrial order, the stratification and occupation system of the society), the polity, and the culture' (Bell 1974a).

It was this overlooked point that I wanted to consider in relation to recent policy in my thesis. Although I was aware that much of Bell's theory has been subjected to heavy criticism (this is discussed in detail in chapter 6) I still felt that this overlooked element had something to offer a thesis that theorised:

'...counter to the dominant sociological theories of Marxism and functionalism. Both Marxism and functionalism, antagonistic as they may be in other respects, share a common premise: that any society is a structurally interrelated whole' (Bell 1974a).

Reflecting on this, I subsequently began to think that there were similarities between Bell's criticism of an interrelated whole and certain polarised views within the world of English Secondary school education. As a teacher working in the sector it was clear that there were competing visions of educational purpose, but in particular there was a polarisation of two conceptions of education, the Liberal and the Vocational, that seemed to have deep historical roots and an enduring and often destructive presence. The conceptions were polarised around ideals that seemed to connect with Bell's distinct realms, in particular his techno-economic realm and his cultural realm. It became part of my approach to trying to understand ICT and its place in English Secondary schools during Labour's administration (1995 to 2010) to examine the educational landscape by joining the analytic structure of Bell's theory to these competing conceptions of education's purpose.

1.3 MOTIVATION

The 'techno-reform' agenda (Cuban 2001) is something that I have become both positive and negative about. On the one hand the excitement of the technology and its undoubted power is something that I wish to see all pupils experience; however I am an educationalist and as such it concerns me that many of the ideas driving this agenda do not fully engage with all the educational ideals, aims and objectives that I endorse.

As a teacher and advisor of ICT in London Secondary schools for the last ten years the issue of the place of ICT in schools is a live and urgent one. Attitudes towards the rapid and expanding use of ICT in education were often a mixture of unrealistic utopianism, suspicion and negativity. The attitudes seemed to be partly rooted in attitudes to change generally but in some cases were specifically about ICT. This interested me. It also interested me that the policy documents and the briefing meetings set up by the LEAs and other educational bodies steering the introduction of the new technology into schools, were all uniformly positive about ICT, and seemed incapable and unwilling to hear any views that were discordant. In particular both teachers and student voices seemed left out of the process. Certain ideals connected to what might be labelled Liberal educational values seemed absent and I wanted to investigate further whether this experience was widespread.

This led me to think about the context of this change. I work with colleagues who could remember seeing their first computer in a school context and I can remember being at school where there were no computers. My first experience of a computer was at College in 1998. My older colleagues recall the introduction of Apple Macs with tiny black and white screens, which were treated with a kind of awe and fascination. These were objects of almost supernatural mystery. Specially designated LEA advisory teachers, often co-opted onto the government initiative of Technical and Vocational Educational Initiative (TVEI), tried to induct fellow teachers into the mysteries involved like techno priests, a role and image they encouraged.

From the very beginning, then, according to this recalled experience, computers were endowed with both power and an idiom of specialised knowledge that was formidable and lent itself to mystification and self-aggrandisement. It was my first experience of the digital divide where inequalities of access to the technology threatened to exacerbate inequalities of power.

This is where I began to feel that I needed to find a theoretical position to explain what I was beginning to see as a tension within the educational world's attitudes toward technology. It was a tension that suggested that there were reasons that went beyond just educational attitudes towards the new technology. I began to feel that perhaps there were larger cultural issues at stake.

My previously completed MSc research investigated thinking about ICT in classrooms had showed several surprising results. For example it showed that teachers were not using ICT as they thought they were. Nor were they changing their teaching styles to accommodate ICT but if anything were accommodating ICT to their teaching styles. They were not using a very wide range of software packages, were on the whole positive about ICT but yet were not as ICT literate as they thought they were. Nor were they invited to discuss how they wanted ICT to work for them but rather were at the end of the delivery of an ICT process, which did not involve them.

Having raised the issue of how some educational values seemed to be hidden from the techno-reform agenda I wanted to explore this further; I therefore embarked on this PhD.

1.4 THE RESEARCH AND ITS CONTEXT

The clearest formulation of the positive, almost evangelically zealous attitude towards the introduction of ICT in schools is what Larry Cuban and others have called the 'techno-reform' or 'techno-enthusiast' agenda (Cuban 2001). These terms make explicit the belief in the overwhelmingly positive and transformative power of ICT in education. This agenda draws from a variety of sources that can see nothing but good coming from ICT in schools (Cuban 2004; Ferending 2003). Paradoxically, it feels both the need to push ICT into schools whilst at the same time believing that the introduction of ICT is inevitable and unstoppable.

The discourse of the techno-reformer can be characterised as a cluster of ideals, values, hopes and desires coupled with a teleology. There is a sense of direction, a directive towards a goal that is utopian. In this there is a common strand with other techno-reformist moments when the introduction of newly invented or newly discovered technologies are considered in terms that go beyond the reach of its merely instrumental nature. By this I mean that the techno-reformists address first and second order change. First order changes merely alter current practices to adapt to a current situation. Second order change is change that fundamentally alters

culture and beliefs. Ertmer writes: '*... second-order changes confront fundamental beliefs about current practice, thus leading to new goals, structures, or roles*' (Ertmer 1999, p48). Moursand thinks this level of change is revolutionary (Moursand 2002). Larry Cuban argues that techno-reformists discuss change at this second level but his research provides evidence only of change at the first level (Cuban 1998, 2001).

It is clear from literature about aspects of ICT policy discourse, such as the literature around the notion of 'digital divide', that the introduction of ICT into schools has not been unproblematic (e.g. Selwyn 2004; Selwyn and Facer 2007).

'...it is not enough that high and low achieving students all have access to ICT in classrooms, if high achievers use ICT as a tool for communication and collaboration, while low achieving students only use it for drill and practice' (Wasser 1997, quoted in Guile 1998, p8).

The possibility that techno-reform discourses are incomplete or failing suggests that current understandings of ICT's role in schools is misconceived. In order to investigate this, this thesis examines English Secondary schools during the period when ICT was being introduced. The thesis joins current critiques analysing the reforms (e.g. Cuban 2001; Selwyn 2004; Grint and Woolgar 1992) and attempts to use Bell's framework to understand limits to ICT in schools that might help organise such critiques and understand why reform expectations are not being met.

The thesis argues that a significant and relevant debate about educational values in the English Secondary sector links with elements of Bell's notion of the information society, and that together these can provide a framework for understanding the limits to the introduction of ICT into English Secondary schools. This is a new framework, comprised of elements that have not been combined in this way before (see chapters 8 and 9). The education debate has tended to be kept separate from the specifics of the ICT in education debate; neither is usually related to debates about Post-Industrialism, new technologies and the economy. This new framework proposes a way of combining these elements to present a more nuanced understanding of the complexities of the introduction of ICT into English Secondary schools.

However, the focus and motivation for the thesis is ICT and education. In applying

Bell's theoretical structure to the policies introducing ICT into English Secondary schools, the thesis inevitably touches upon theories concerned with the sociologies and philosophies of Modernity and Post-Modernity. It would be possible to re-conceive of this thesis as contributing to fields such as sociology or cultural studies; however, this is not the aim of the thesis. These related fields are drawn from, but the intention is not to contribute to them; instead, the focus for the thesis is the educational implications of the ICT policies in these schools, and the intended focus is to research in the field of educational technology. For example, Bell's work is usually seen in the context of work in sociology, and its presence here might mistakenly suggest that this is primarily a sociological thesis. Instead, elements of Bell's sociological work are being taken up and applied in the context of educational technology research. It is English Secondary schools and the introduction of ICT that are the prime concern here, and the thesis is intended for readers working in the field of ICT and education.

In drawing on Bell's theoretical structure I inevitably use terms such as 'culture', 'techno-economic' and 'political', all of which have been important and contested in fields such as sociology and cultural studies. While these controversies are acknowledged, I do not intend to try and contribute to them for two reasons. Firstly, the scope of any thesis is necessarily limited and other controversies (such as the purpose of schooling) are more important to the task chosen here. Secondly, the terms have been used as Bell used them, in terms simply defined by what he calls the 'axial principles' of each realm.

'...each of the realms I posit is obedient to axial principles, which embody these contradictions: the social structure follows the norms of functional rationality (i.e. efficiency, role segmentation, increased specialization, bureaucratization, etc.); the polity operates on the principle of formal equality (e.g. one man, one vote) and is based on representation or participation; and the culture emphasizes self-realization and self-fulfilment. Because of these contrary axial principles we have increasing strain and conflict in the society: equality vs. bureaucratization, the "whole man" versus the role demands, etc...' (Bell 1974b, p1).

The application of this theoretical structure to English Secondary schools and the introduction of ICT is justified here simply in terms of its potential productivity. The thesis is interested in English Secondary schools and their use of ICT and is asking

whether applying some version of Bell's structure might produce a better understanding of them. It is recognised that subsequent work may need to be undertaken that relates this analysis to wider debates within sociology or cultural studies, but that would be a discrete and additional step rather than part of the work undertaken here.

My thesis is asking what might be further understood if schools and ICT policies were analysed in terms of the tripartite division of realms in Bell's thesis. It is asking whether the separation of discourses about this process into three realms (technology and economics are placed in the same realm by Bell) produces new information about the important phenomenon of ICT's introduction into English Secondary schools. In particular, 'culture' is used in the sense that Bell uses it, as a part of what makes 'society' that is not reducible to either of the other realms (these ideas are further elaborated in chapter 6).

In terms of schools, I relate Bell's framework to Oakeshott's metaphors of schools as monasteries or markets to suggest that the idea of incompatibility between realms helps explain a strand of thought already prevalent in the English Secondary schooling system (see chapter 3 and 6).

To summarise, the purpose of this section has been to say both what the thesis is concerned with, but importantly, to clarify also what is outside of the scope of this thesis. The work is directed towards a better understanding of a particular set of policies in a particular type of school in a particular country. It is not primarily about technology, cultural theory, politics, modernity, post modernity, sociology nor philosophy, although these elements form a necessary background to the work that is undertaken here.

1.5 RESEARCH QUESTIONS

Reflecting the discussion of the research and its context, the questions that guide this research are as follows:

Research Question 1 (RQ1): *What is the purpose of English Secondary schooling?*

Research Question 2 (RQ2): *How does the ICT policy introducing ICT into English Secondary schools relate to these schools' broader purpose?*

Research Question 3 (RQ3): *What happens to education when ICT is introduced into English Secondary schools?*

Research Question 4 (RQ4): *How does policy influence this process? In particular what have the policies been? How were they formed? How are they expected to influence practice?*

Research Question 5 (RQ5): *What concepts can be used to explain the influence of the policies? Are these Educational concepts? If not, does this make a difference?*

1.6 ORGANISATION OF THESIS

I begin the thesis with this chapter, which introduces the research to be undertaken, my motivation, the research and context within which I will be working and my research questions and their significance to the thesis.

Chapter two addresses RQ1. In it I outline the contours of two competing educational ideals for educational purpose. The chapter shows that the two polarised views, captured in Michael Oakeshott's two metaphors of schools being like monasteries or schools being like markets, have been a presence in English Secondary school education from the eighteenth century onwards. The chapter gives the main features of the conflict. In so doing the chapter highlights the specificity of the thesis' focus: not only does it concentrate on a very particular period, 1995 to 2010, but it also looks at a very particular area of education, English Secondary schools. In so doing the chapter both shows what educational forces emanated from this particular sector as well as constraining generalised statements about education and ICT to this sector.

In chapter three I examine ICT in English Secondary schools and ask questions as to how it is being understood and how it is being justified in order to address RQ2 and RQ3. I outline a brief history of government funding, of the influential policies that attempted to put ICT into these schools, of the reasons given for this investment and these policies and the impact ICT has had in these schools.

In the next two chapters I address RQ4. In chapter four, I examine the link between policy and practice, looking at the dominant reasons given for prioritising ICT in schools. I examine the place of ICT policy discourse in a wider policy discourse and then show how priorities from the general discourse became priorities structuring the educational reforms. It was as part of general public service policy reform that ICT education policies introduced ICT into schools. The chapter examines the reasons that were given to justify the policies.

In chapter five I examine both positive and negative critical literature about the ICT policy discourse. In particular the chapter will show how understanding of the new policy discourse both supports and challenges placing ICT in English Secondary schools. The chapter looks into the current debates around ICT in Schools. The chapter will offer overviews of those who oppose the discourse and who resist by working with a different understanding of the purpose of education. These writers' resistance opposes an ideology that links educational values to those of economics and technology.

In the following chapter, chapter six, I will examine the history of the discourse through sociological models of Post-Industrialism, in particular, aspects of Bell's Information Society. The thesis poses a question about the scope of technological impact and asks how far a reading of Bell's three realm sociological theory might be used to understand ICT's relationship with education and further how the relationship between educational and techno-economic values might best be understood. This framework is the way I approach answering RQ5.

Chapter seven describes the research approach that will be used to investigate the ICT policy discourse and case study analysis. It looks at the general principles of Critical Discourse Analysis (CDA), briefly outlines different approaches within this

tradition, and considers critiques of CDA. The chapter then shows how CDA will be related to Bell's concept of the distinction of realms and their axial principles. It also justifies the use of two distinct case studies to reflect concerns such as Wodak's that analyses should consider whether and how discourses change over time.

In chapters eight and nine I analyse documents used by key actors working within English Secondary schools when working to introduce ICT into their English Secondary schools. The documents are subjected to a detailed critical discourse analysis and then the discourses are further analysed using Bell's tri-partite theory of realms and their axial principles. This reveals which discourses have been dominant, and what elements are often hidden. In this, RQ5 is addressed.

The final chapter of this thesis, chapter ten, will draw together my findings into a synthesised conclusion followed by recommendations.

1.7 SIGNIFICANCE OF THE THESIS

There is an ongoing debate about the use of ICTs in English Secondary schools. The debate is taking place in a context of huge financial, political and theoretical investment driven by an ICT and education policy discourse. Critics have identified problems arising from this agenda, in particular a failure to deliver the transformation of Secondary schools that the policies promised. The thesis engages positively with the debate by offering an alternative paradigm for investigating such discourse.

In so doing critical insights into the nature of ICT and learning may be discussed outside of the constraints of the dominant discourse. This will provide more room for those insights to be properly incorporated into a new policy discourse, one that recognises the values other than those of the dominant discourse of 1995-2010.

The thesis therefore has both a negative and a positive function. It seeks to deconstruct the dominant ICT education policy discourse of the techno-reformers. In doing so it will clear conceptual space that can then be used to develop an alternative discourse, in which educational values of self fulfilment, self expression

and equality can be recognised.

The thesis seeks to be more than merely *descriptive* of a certain discourse and its genealogy. It is *normative*, suggesting what *should* be contained within any educational policy discourse, including an ICT educational policy discourse.

1.8 CHAPTER SUMMARY

In this thesis I want to ask serious questions about the agenda of the techno-reformists. Educational critics like Cuban (1986, 1995, 2001, 2003, 2004) make clear there are problems with the techno-reform agenda.

'As for enhanced efficiency in learning and teaching, there have been no advances (measured by higher academic achievement of urban, suburban, or rural students) over the last decade that can be confidently attributed to broader access to computers. No surprise here, as the debate over whether new technologies have increased overall American economic productivity also has had no clear answers. The link between test score improvements and computer availability and use is even more contested' (Cuban 2003, p178-179).

Although an American voice, my own anecdotal experiences in English Secondary schools reflected a similar sense that ICT was not doing in schools what the dominant reform agenda that was introducing it claimed it would.

Many of the positive educational ideas that connect with ICT, such as 'independent learning', 'self-assessment', collaborative approaches to learning and so on pre-date the ICT policy discourse. However my reading of Cuban and my own experience suggested to me that the policy discourse was constraining these ideas, subtly changing them to fit in to the techno-reform agenda.

The research programme the thesis follows aims to deconstruct the dominant policy discourse of the techno-reformers and in so doing offers a different paradigm for the development of a discourse of ICT policy for education in English Secondary schools. The thesis proposes a reading of Bell's tripartite division of society, drawing on the 'cultural contradiction' (Bell 1976) arising from his sociology of separate realms and their axial principles, in order to foreground values opposed to those of

technology and economics. In approaching the policy discourse introducing ICT into English Secondary schools in this way I am trying to see if it is possible to rethink the discourse of ICT educational policy by relating the polarised visions of educational purpose described in chapter two to Bell's tripartite realms.

In the next chapter, the thesis looks at the way English Secondary schools have been understood in order to provide evidence that ideas about the purpose of schooling affect how ICT is understood.

CHAPTER 2:

MONASTERIES Vs MARKETS

2.1 INTRODUCTION

There is a long-standing conflict about the purpose of Secondary schools in England (Pring 1994). This chapter explores this, identifying the tensions and contradictions that reveal their particular characteristics, in order to answer the first research question, about the purpose of English Secondary schooling and so frame the analyses that follow. English Secondary schools can be understood as functioning despite using contradictory justifications. The chapter examines schematically the two opposing rationales for these schools that historically have been a presence in the school landscape for the last century. One is labelled the liberal justification for schools and education, and the other is labelled the vocational justification.

2.2 LIBERAL EDUCATION: OAKESHOTT'S METAPHOR OF SCHOOLS AS MONASTERIES

A Liberal justification for schools was established in the writings of Victorian educational thinkers such as Newman and Mill (Newman 1902; Mill 1861, 1965). It is a justification that places the cultivation of the mind and the personal well-being of the learner as being education's main purpose.

The conservative educational philosopher Michael Oakeshott used the metaphor of schools being like monasteries to characterise this approach (Oakeshott 1989). This metaphor captures the thought that the purpose of schools is to create a space for engagement with things of the mind and soul, largely disregarding any specific practical relevance such studies might have. It was charged with the task of making 'people good' and self-fulfilled (Pring 1994). Oakeshott writes of schools as an '*...unexpected invitation to disentangle oneself from current happening*' (Oakeshott 1989). In this vision, educational purpose was not about practical relevance and

economic well-being but about spiritual, intellectual and moral self-fulfilment.

The idea of intellectual excellence being nurtured by individual genius and hard work couples with the idea of an intellectual elite of guardians who would be the future leaders of a nation. This is the view of the clerisy that Coleridge argued for, a role that liberal educationalists argue is now taken by teachers. T. H. Green (Gordon and White, 1979) thought that this was the model of a liberal education preparing students '*...in Oxford for the professions and public service*' (Pring 1994, p63). But the vocational usefulness of this education was not its prime purpose, even though it was thought that being given such an education, education that aimed at forming the individual mind intellectually and morally was most suitable for the highest duties of state. Education was conceived of as taking place in a metaphorical 'place apart'.

Oakeshott writes that:

'In short, 'School' is 'monastic' in respect of being a place apart where excellences may be heard because the din of worldly laxities and partialities is silenced or abated' (Oakeshott 1972, p69).

The separation from worldly things is important. Typically this approach to education is about releasing the student from having to worry about day-to-day pressures and contingencies and to have a space where universal reason and ideals can be contemplated and considered.

'Liberal learning is a difficult engagement... It is a somewhat unexpected invitation to disentangle oneself from the here and now of current happenings and engagements, to detach oneself from the urgencies of the local and the contemporary, to explore and enjoy a release from having to consider things in terms of their contingent features, beliefs in terms of their applications to contingent situations and persons in terms of their contingent usefulness' (Oakeshott 1975, p39).

This approach bundles together the idea of a place set apart with ideas about things, beliefs and persons that are also set apart. It encourages the idea of a school as being a zone of order and individual endeavour that encourages students to engage deeply with deeper things than the everyday. In such a zone, the student is able to reflect critically on the deep and eternal questions that allow for the formation of an intellect and moral sensibility that will be useful when they return to the world to take up their leadership role in society.

And of course it links itself to the evaluative sense of culture. John Henry Newman makes this clear in an early version of the ideal:

'Liberal education, viewed in itself, is simply the cultivation of the intellect, as such, and its object is nothing more or less than intellectual excellence' (Newman 1852, p121).

Although the label 'liberal' was attached to this approach to educational purpose by Victorians some of liberal education's most important features – the development of the mind, intelligence, academic engagement, the intrinsic worth of education, all captured in the notion of *"education for education's sake"*, and a subject-based, largely academic curriculum – have been traced by educational historians, and John White in particular, to roots that reach back into seventeenth century Protestant Puritan religious communities, mediated by the influence of a particular Parisian logician called Ramus (White 2003, 2006a). White's thesis suggests that from this early period education was modelled on ideas that would be later labelled liberal.

Liberal education can thus be conceived as being a modernised, secular development of what White describes as 'Ramus' legacy'. This legacy gave abstract subjects pride of place (White 2006a, p159). These abstractions were subdivided into discrete parts each of which was to be known and tested. Learning was to be taught as efficiently as possible with no time wasted, hence the development of school timetables, optimal class sizes for instruction in the proscribed curriculum matter and so forth.

This approach gave high status to educational ideals focused on the cultivation of the mind as a good in itself, and by extension gives ideal of education as having intrinsic worth irrespective of its usefulness.

Again, this belief has been identified as arising from schools originally justifying themselves in terms of religious belief. According to White, the mind for Ramus was originally to be cultivated so that the Divine pattern of the Universe could be grasped. As secularisation gradually replaced theological reasons the cultivation of the mind was justified by the liberal educationalists in terms of a moral imperative to better oneself. An educated life was better than an uneducated one according to this thinking, and it was only through education that an individual could flourish.

Education had an ethical justification arising from a commitment to ensure that the pupil's well-being is to do with her growing to understand his or her own moral responsibility towards others (see also Griffin 1986).

As secular reasoning has superseded religious justifications, different reasons for having schools have been developed. In England, schools have been given an ethical justification linked to a particular political context. The values of education and schooling are intrinsic and ethical. The educational philosopher Richard Pring has argued that schools should be vehicles for developing significance and flourishing in people. He draws on the ideas of Stenhouse where the arts and humanities are understood as resources for young people to explore deep matters of concern (Stenhouse 1975, 1983). Stenhouse's ideas are about education as exploration, a seeking for answers and testing out answers against evidence. The classroom is the place for engaged and serious thinking. It is an arena for all abilities, all genders, all ethnicities and backgrounds. It is a model of education that isn't about experts imparting knowledge but is of the deliberation of serious issues by all. Nor is this impractical, esoteric, academic learning. Pring writes:

'The humanities, not skills training or vocational courses, are in this respect central to the education of all young people as they are deliberating seriously about decisions and issues which concern them deeply' (Pring 2000, p105).

What is taught and how it is taught should be about enabling this sense making.

'There may be many other worthwhile things to do in life; but the values that teaching is centrally concerned with are those of understanding or making intelligible the experiences one has and of making accessible yet further understanding and experiences' (Pring 2000, p106).

Whatever is being taught, then, is intimately connected with the value of making intelligible important things, of making life intelligible and meaningful.

2.3 DEWEY AND THE ETHICAL DIMENSIONS OF LIBERAL EDUCATION

This is the view that education and educators are part of a moral tradition that is to induct young people into a worthwhile way of understanding the world, of relating to

the world, of experiencing it and relating to others in this world. It is part of a civilizing role that recognises the moral duty to ensure all people are initiated into this world. It is linked to memory, to the passing on of wisdom and the depths of culture which is derived from an earlier understanding of traditional education where:

'Civilization hangs suspended, from generation to generation, by the gossamer strand of memory. If only one cohort of mothers and fathers fails to convey to its children what it has learned from its parents, then the great chain of learning and wisdom snaps. If the guardians of human knowledge stumble only one time, in their fall collapses the whole edifice of knowledge and understanding' (Sacks 1997, p173).

Oakeshott writes about education as introducing young people to *'conversations between the generations of mankind...'* (Oakeshott 1972).

The American philosopher Dewey is a key thinker for many of those arguing for an anti-vocational purpose for schools, but he is also interesting in that he presupposes a certain political reality. Pring's ideas about education are essentially moral and rooted in a Deweyian tradition of education where education is generally understood as a *'social function, securing direction and development in the immature through their participation in the life of the group to which they belong'* (Dewey 1916, p81).

According to Dewey, education arises out of a community:

'Men live in a community in virtue of the things which they have in common. What they must have in common in order to form a community or society are aims, beliefs, aspirations, knowledge - a common understanding - like-mindedness as the sociologists say' (Dewey 1916, p4).

'Like-mindedness' involves communication and sharing. Communication and sharing need not imply consensus. Communication can be the communication of differences. Sharing also can be one of sharing difference. The community is bound at a deeper level by an educative process that brings differences together in understanding. Rich and poor communities could therefore be part of a whole community through education, as could an urban with a rural one. And the political organisation dealing with this in the modern state has been democracy.

Linked to the notion of community is a notion of culture. For Dewey a prime importance of education is to *'initiate young people into a cultural heritage - whether*

that be the specific cultures cherished by particular groups or a common culture that transcends the particular ones and creates unity amidst diversity' (Pring 2006, p7). Culture is understood as 'heritage or a social tradition'. It is transmitted from the community, is learned and is shared (Parsons 1952, p52). Culture has been used in two senses, however. It is sometimes used descriptively to describe the practices of a community, such as when we talk about 'gang culture' or 'slum culture'. It is also used evaluatively, so that to be cultured is a mark of evaluation where something is valued as being superior to something that is not cultured. So educators sometimes write about cultures that are powerful and enabling. A Pringian/Deweyan University culture is seen evaluatively like this, as being a culture that puts people in touch with the fruits of a broader horizon of work and achievement than one limited to a 'folk culture'. The danger of this evaluative approach is that it can be frozen in time and become disconnected from actual life and experiences.

Yet for the thesis the key point is that there are competing ideas about how to manage modern multi-cultural societies, and in modern England these ideas are typically a form of political democracy. Alongside cultural realities, these political ones have required a vocabulary and so understanding schools in terms of these political principles has also been another set of values that educators have engaged.

The complexity of this liberal approach to schools, that is keen to stress the intrinsic worth of education whilst at the same time emphasising a potentially contradictory academic, subject orientated curriculum organisation has been central to understanding English Secondary schools. The idea that cultivation of the mind is the primary virtue justifying schools has bequeathed high status to academic, mental, abstract activity and lower status to those of a more practical, physical or vocational purpose in English education. Dewey disagreed with this tendency within liberal educational philosophy, thinking that it inevitably leads to classifying people in terms of its hierarchical assumptions.

Dewey understood it as reflecting an elitist division that stemmed from the ideas of Plato and ended in the three way division of types that schools were then set up to educate; those who were good with their hands, those who were good and those who were good with abstract thought. He summarized the thinking that he criticized

as following:

'In some individuals, appetites naturally dominate; they are assigned to the labouring or trading class, which expresses and supplies human wants. Others reveal, upon education, that over and above appetites, they have a generous, outgoing, assertively courageous disposition. They become the citizen-subjects of the state, its defenders in war, its internal guardians in peace. But their limit is fixed by their lack of reason, which is a capacity to grasp the universal. Those who possess this are capable of the highest kind of education - and become in time the legislators of the state - for laws are the universal which control the particulars of experience' (Dewey 1916, p90).

And there is an elitist, hierarchical strand to the liberal education approach. The philosopher O'Hear, who is a traditionalist educationalist, finds educational elitism attractive and writes that:

'Education... is irretrievably authoritarian and paternalistic... imparting to a pupil something which he has yet to acquire... The transmission is... inevitably between unequal's' (O'Hear 1991, p5).

O'Hear thinks that the English comprehensive ideal, which opposes any selective school approach along the lines described by Dewey above, is the reason why standards in education have declined. He claims that *'It is highly plausible to see the egalitarianism which stems from the writings of John Dewey as the proximate cause of our educational decline'* (ibid p28) because he thinks that real education needs to be about the intellectual excellence that genuine education embodies and of which only a small elite are capable.

But liberal education need not result in justifications of such elitism. Schools can be understood as being about creating a more cohesive and enriching community based on the ethical requirements of a democratic society valuing autonomy and a flourishing life embedded within a culturally complex mix of associations underpinned by a deep like-mindedness. This is a much richer reading of the 'schools as monasteries' metaphor. Schools and Universities may well be required to be places set apart from the parochial, partisan and sectarian societies in which they exist, but only so they are places which can develop the kinds of critical learning such a viewpoint considers necessary to flourishing.

Education had an ethical justification arising from a commitment to ensure that the

pupil's well-being is to do with her growing to understand his or her own moral responsibility towards others. Fulfilling life is understood in the English National Curriculum as a commitment to others within a democratic society that is constituted by such a commitment where *'...The personal development of pupils, spiritually, morally, socially and culturally, plays a significant part in their ability to learn and to achieve'* (DfEE/QCA 1999, p10-12). To ensure that everyone was able to fulfil their commitments as a citizen they had to be educated into the autonomous life of a democracy (White 2002). The 2000 Handbook for the 2000 English National Curriculum has a four-page statement about aims and values. The first draft, which remains essentially the same in the final more complicated version (DfE/QCA 1999, p10), states that the first aim of education in the curriculum is *'a belief in education as a route to the well-being and development of the individual'* (DfE/QCA 1999). This objective may be summarised as being 'self-fulfilment'.

If self fulfilment is a central value of an autonomous democratic society then schools need to provide its citizens *'...with whatever acquaintance is necessary with a wide range of possible intrinsic goods from which to make informed choices'* (White 2002, p171). If there is to be real choice, then there cannot be any question of biased items being offered to skew choices. For each person, *'If their major preferences are for the acquisition of material goods or others' recognition and they have no place for intellectual or other objective list pursuits, they can still lead a flourishing life if successful in attaining their preferred goals'* (White 2002, p171). Harry Brighouse has written extensively on this, agreeing with White and Pring that in a large multicultural society like England the very idea of autonomy itself may be something not valued by a section of the community. He takes as an example a religious group that wishes to resist modernity and hold on to its traditions, including the ideal of education as a life of critical autonomy. This issue is complex just because it involves cultural and political values (Brighouse 2005).

What thinkers such as White, Pring and Brighouse express is how very complex the notion of an intrinsic worth of education is and how hard it may be to know what it would be for any individual. This is the root of the potential difficulty in identifying academic, intellectual value as being the prime value for any individual's flourishing.

2.4 VOCATIONAL EDUCATION: OAKESHOTT'S METAPHOR OF SCHOOLS AS MARKETS

It is partly out of this realisation, plus an antagonism to the potential elitism of the liberal educational position, that an opposing view is also part of the English Secondary school landscape. In contrast to this liberal ideal of schooling is an alternative, one focused explicitly on the relevance of schooling to economic values. This is the option that conceives of schools as having a largely vocational purpose. Schools and education are vehicles for creating whatever specific knowledge and skills people need to maintain a thriving economy. Oakeshott is again helpful in providing the metaphor to capture this ideal, this time likening schools to 'markets'. In this opposing ideal schools are primarily vehicles for ensuring the economic well-being of the state. This view of educational purpose contends that engagement with industry, commerce and general economic need are paramount in legitimising the existence of schools. They exist as a vital economic resource.

So in this alternative vision, schools and education have value because they answer economic needs. Rather than having intrinsic value, education is conceived of as having an extrinsic, purely practical value relating to the vocational, practical needs of society at large. It is an approach that denies there are intrinsic values of education that need have no practical outcome. It is an approach to education that emphasises a means/end efficiency model, which calculates value in terms that deny intrinsic value. It is a position that denies views of an educationalist such as Harry Brighouse, for example, who argues that personal flourishing is the aim of education, and who is therefore more closely aligned to the liberal conception of education (Brighouse 2005, chapter 3).

Brighouse explicitly contrasts his understanding of what education is for with those who think that it should be designed to help the economy grow. Brighouse even has arguments against thinking that economic well-being have much to do with personal flourishing. He cites Frank (1999) who thinks that once a certain level of financial well-being is reached, further financial gain do not significantly contribute to flourishing. He draws on Layard's view of happiness to argue that understanding

flourishing in economic terms and in terms of just being happy fundamentally misunderstands the idea (Layard 2005, p63). Brighouse writes that *'flourishing is a richer property than happiness, sensitive to many more features of a person's life than just her inner states'* (Brighouse 2005, p47).

Finding purpose in the economic value of schools is an approach that also denies that educational value is moral. Rather, it emphasises the values of means/end efficiency. Pring argues this contrast between values of education and values of means/end efficiency when he writes that:

'...education itself is a moral practice, part of the "humane studies" or humanities, rather than the social sciences. Ideally the "practice" should be in the hands of moral educators (who themselves should manifest the signs of moral development) rather than in the hands of managers, trainers, or "deliverers" of a curriculum' (Pring 2000, p102).

So, Oakeshott's contrasting metaphor presenting schools as markets captures a different rationale for schools that also points to a different vocabulary from the one typically found in the liberal conception. As a small example, Odden and Kelly write:

'...the tax-paying public, the business community, and policy-makers still pressure the education system to produce results and to link pay - even school performance structures, more broadly - to performance' (Odden and Kelly 1997, p11).

This immediately seems worlds away from ideals of intrinsic worth and the unworldly cultivation of the mind for its own ethical good.

Performance management, performance driven pay based, managerialism and targeted outcomes replace Deweyian ideas about cultivating wisdoms within historical communities, developing the mind and engaging in education for education's sake. Odden and Kelly are mentioned here because they are taken by Pring as examples of thinkers influential in shaping the views of government in the UK about the role of teaching and education generally (Pring 2000, p107). Pring claims that the government Green Paper, 'Teachers: Meeting the Challenge of Change' (DfEE 1998a) is directly influenced by Odden and Kelly's ideas and is connected explicitly with a vision of the teaching profession that contrasts strongly with the liberal one he articulates alongside the likes of Brighouse, Stenhouse and White.

Pring points out that the language in the Green Paper is about 'productivity', 'cost efficiency', 'effectiveness', the 'delivery of a product' and so on. He argues that 'quality' is a key expression. He argues that in this context it refers to the idea of standards that are linked explicitly to performance indicators that can be measured and ranked at different levels. Attainment targets are part of this approach. 'Quality' becomes identified with preconceived outcomes, which are both testable and public (e.g. Pring 1996, p58). 'Diversity' is about the means of ensuring 'quality' when discussed as part of this approach. So 'diversity' becomes part of this approach to education when used in education, such as in the White Paper 'Choice and Diversity' (DfE 1992). 'Choice' in the context of this language of business refers to opportunities provided by diversity to produce value.

Pring argues that the choice of language used is important because it establishes a cluster of associations, metaphors and values connected with the market in contrast with those associated with the ethical. This language describes learners as customers. The teacher is thought of as a deliverer of someone else's product. And in so doing, it removes the intrinsic values and purposes of education. Where in a liberal conception of schooling issues of good citizenship are embedded in all educational practices (because they define what all schools are intrinsically about) in this opposing view good citizenship becomes merely a subject to be studied as part of the educational landscape. So in English Secondary schools Citizenship was introduced as a subject rather than an underlying value for all schools. Pring argues that introducing Citizenship as a subject '*...fails to see that all teaching, when conceived as a moral practice concerned with values and conceptions of what it is to be human, necessarily is a preparation for citizenship broadly conceived*' (Pring 2000, p110).

This approach articulates issues that aren't at the heart of the market metaphor view of schools. Indeed, Pring goes so far in his opposition to that view that he denies that it can actually be educational. Pring thinks that the market approach to education has established non-educational teaching. Schools that embody this approach are therefore not educational establishments at all. Pring himself states this unambiguously when he writes that '*...Not all teaching is, therefore, necessarily educational*' (Pring 2000, p111). The view that education and learning and teaching

can be discussed in economic terms, in terms of business, loses the moral imperative of education. Schooling, teaching, learning understood in terms of the economic metaphors is therefore not educational. Pring explicitly argues this when he says that:

'The danger is that, as we adopt a very different language of teaching - a language which for the sake of increased productivity and improved standards as conceived by those who think in business terms - this essentially moral purpose and character of teaching will be lost' (Pring 2000, p111).

The point that is important for the thesis is that Pring thinks that the two metaphors, of schools as monasteries and schools as markets, are incompatible metaphors. They contradict each other. This is clear if the liberal, monastic view is labelled anti-vocational, and the market one 'vocational'. As they stand they are irreconcilable and speak from different worlds.

2.5 ICT AND ENGLISH SECONDARY SCHOOLS

Having identified complexity of the historical development of ideas about schooling in England, this section focuses how the introduction of ICT into such a context has connected it with this history and the realities it has produced. The example given here is how a subject-based curriculum was invented because of prevalent ideas about educational purpose. Although my thesis is not about ICT as a curriculum subject, this makes it possible to understand 'in miniature' what the thesis is interested in, which is how far the ICT policy for English Secondary schools can be understood as either continuing or breaking from its historic roots. This section thus prefigures the broader contribution the thesis will make to RQ2, which asks about the relationship between the ICT policy and the broader purpose of schooling.

The curriculum in English Secondary schools has been designed along monastic, liberal lines wherever it uses a structure of academic subjects. Historically, the idea of English secondary schools using discrete academic subjects taught in separate short units of time is something that was developed by dissenting religious groups in the eighteenth century and has evolved into the secular version that one finds today (White 2006a, 2006b).

The 1988 National Curriculum was organised using ten traditional academic subjects. However, ICT is different because ICT, IT as it was then, was initially identified as a theme that '*...should be taught through the foundation subjects*' (White 1990, p105).

Historically the vocational schools in England have been associated with lower status groups, such as working class and women, who have been largely excluded from a liberal educational provision. In a mainly intellectualist education system non-academic subjects acquired a low status. White notes that it was only in the 1960's that egalitarian educationalists began to demand a relevant curriculum for all classes (White 2006a, p123). From this perspective, ICT's introduction into such a school culture may well have been influenced by residual attitudes from this history.

The 1988 English National Curriculum however didn't innovate towards the inclusive curriculum based on relevance. Instead it universalized the academic curriculum and did so through inertia rather than any positive decision of prioritising the relevance of liberal over non-liberal conceptions of education. The inclusion of technology and music were the only differences to the academic curriculum of the dissenters in 1904 (Aldrich 1988, p22). ICT, as a branch of technology, was imported into the curriculum as a subject of low status, associated with elementary education for lower class boys.

2.5.1 The Peculiar Presence of ICT

Subjects are inward looking in two distinct ways. They are supposed to reflect the inner working of the human mind. Miller writes that Ramus, the originator of the puritan/dissenting view of subject based educational curriculum structures, '*... taught that logic is the formalized or regularized version of the natural intelligence*' (Miller 1939, p144). Subjects are inward in this intellectualist sense.

But they are also inward looking in a different sense, the sense that they are independent of one another. They are aimed to develop domain-specific understandings and knowledge. ICT however has been defined in the National Curriculum since 1988 more in terms of a cross-curricular skill embedded in all subjects rather than a subject in its own right. It was originally part of a subject called

'technology' that comprised 'design and technology' and 'Information Technology'. By 1995 it had been separated out and become a National Curriculum subject in its own right, as well as a cross curricular dimension to be found in all areas of the curriculum. But its status as a separate subject is subordinate to its cross curricular status.

ICT has been considered *outward* looking in two senses. It is outward looking in that it is defined more as a skill than as an intellectual subject. Outward here means something akin to 'not of the mind'. But it is also outward looking in that it is conceived of as a skill that is to be used in all subjects (Kimbell in White 2005).

ICT finds itself in a curriculum orientated towards isolated academic subjects, even if its overall aims make a subject based inward academic curriculum seem odd. It is specified as a skill that is cross-curricular, as well as a subject in its own right. ICT is subjected to two gravitational pulls; one towards a subject base and another towards a more inter-subject base. Inevitably, the status of these two forces will be influential. In the English Secondary Curriculum the subject base has tended to be high status (linked as it is with intellectualism, as we have seen) and the cross-curricular lower status.

2.5.2 ICT's Role in the Curriculum

Overall, this chapter has explored the wider influences derived from a specific educational debate that influence ICTs introduction into English Secondary schools. These forces are specifically nuanced by the particular context in which they are embedded. Outside of an English context, as has already been noted, the distinction between monastic and market conceptions of schooling may well take a very different form and have different influences. So, for example, the difference between vocational and anti-vocational subjects may not be anything like it is in England, Germany, for example, gives vocational subjects much higher status than in England and in other educational systems monastic and market conceptions of schooling are not polarised to the extent as they are in the English model. Different cultural and political realities bring about different educational realities. One of the issues that the thesis is concerned with is whether ICT policy has understood this, or whether it has proposed an ICT in education policy that largely ignores these factors.

It is immediately noteworthy that ICT was identified as a problematic presence in a curriculum designed around subjects right from the beginning of the National Curriculum. ICT is a subject that throughout the period of the case study undertaken (1995-2010) has been *included* into the core educational part of the curriculum whilst at the same time being *excluded* from the same educational vision as the other parts. ICT has a large inter-subject element, which allows it to cross over the whole curriculum and which contrasts with the separate subject, inward directed orientation of the curriculum organisation. What isn't clear is whether ICT is conceived of as a useful tool for resourcing other subjects or whether it is being conceived as a new element that transforms old subjects into a more relevant newness more fitted for a transformed vocational reality beyond school. The former approach would endorse the monastic approach to schooling, the latter a market approach.

This highlights an important point for the thesis, that complex historical forces for schooling don't necessarily reflect those for technology, and that there could be contradictory elements when school and technology are combined. This is something that the chapter on Daniel Bell will develop.

2.6 CONCLUSIONS

This chapter has addressed the first research question, which asked about the purpose of English Secondary schooling, by using Oakeshott's distinction using the metaphors of 'schools as monasteries' and 'schools as markets' to highlight the way the English Secondary school system has been characterised. In doing so, it has provided evidence that political issues arising from schooling in democratic states with individuals with disparate and different sets of values are also important in trying to organise legitimizations for these schools. The chapter has suggested that the English educational system is not a template that is generalisable but is specific to its own historical context and traditions.

The chapter has mentioned the idea of different and competing discourses but has not explained in detail how the term 'discourse' is being used; this issue will be revisited in later chapters, and in particular in the methodology.

This chapter also discussed the place of ICT in the curriculum, in order to provide evidence that ideas about the purpose of schooling affect how ICT is understood in this context. In so doing this chapter has contributed to answering RQ2. It has suggested that that understanding will involve political and cultural issues as well as those of the economic and the technological. This is important when questions are asked about the purpose of ICT in schools and in particular, how policy introducing ICT into English Secondary schools is justified. The critical discourse analysis of the two case studies later in this thesis will therefore show points of comparison and contrast.

Before moving to the case studies, however, the next chapter moves from this general framing of the work to consider in more detail the history of the policies introducing ICT into English Secondary schools.

CHAPTER 3:

ICT IN SECONDARY ENGLISH EDUCATION

3.1 INTRODUCTION

Information Communication Technology (ICT) has now been used in areas of the English Secondary school curriculum for over twenty years; it has been introduced into secondary education through a series of heavily funded government initiatives since the launch of the microcomputers into schools initiative in the early 1980s. This chapter will examine the short history of ICT in Secondary Education concentrating on some recurring debates. This chapter will answer research RQ2 and RQ3.

The chapter first looks at government investment in ICT in English Secondary schools. It outlines the funding and policy initiatives that have introduced ICT into this sector and then examines the reasons that have been given for this huge investment.

It continues by looking at the impact of these initiatives on schools, recognising that measuring impact is complicated by the difficulty of knowing which impacts are due to ICT and which are not.

3.2 GOVERNMENT FUNDING - A BRIEF HISTORY

Major initiatives pushing ICT into education began in 1980. For some commentators (e.g. Ball 2008) this was a time when a decisively new approach to education was being formulated. When Mrs. Thatcher came to power her government began a process towards educational reform, including the introduction of computers into schools that the New Labour Government of 1997 continued. Computers were not as developed as they are today so other commentators have suggested that it wasn't

until the Blair Government of 1997 that ICT was able to take on a plausible central role in the development of the New Labour ideology (Selwyn 2008). However, there is no doubt that the period between 1980 and 2007 did see a growing importance in the role of ICT in educational policy making and a steady stream of policies were produced to increase the presence of ICT in English schools generally and English Secondary schools in particular. Between 1980 and 1986 the Conservative Government introduced their 'Microelectronics in Education Programme' (MEP) that used £32 million to promote the use of computers in schools.

This was a period when developments in ICT were becoming more visible in society more generally. For example it was in 1983 that the Macintosh 128k was announced and throughout the decade of the 1980s the world witnessed the development of both Apple Macintosh and the PC as part of the defining technology of the age. The first version of Microsoft Windows was released in 1985 and this development of computer technology throughout this decade enabled the technology to become part of a background noise about what sort of society and world was being developed. As the technology became more fashionable and powerful it became a defining technology for a government policy agenda that was about producing transformations in response to the challenges of the new.

The government injected money into schools to increase the use and the presence of computers into schools; this included the 'Micros in Schools Scheme', which was a £16 million subsidy from the Department of Trade and Industry (DTI) aimed at purchasing computers between the years 1981–1984. 1982 was designated 'Information Technology Year' (IT 82), which confirmed that the government of the time was taking computers seriously.

A government programme to increase IT awareness further was introduced between 1983–1987, the 'Technical and Vocational Education Initiative' (TVEI), which spent £240 million to promote technical and vocational education in schools. The TVEI provided an environment in which teachers and ICT enthusiasts could begin to develop teaching and learning ideas using computers. A software subsidy from the DTI provided £3.5 million to subsidise the purchase of educational software in 1986. The 'Modem Scheme' was a DTI subsidy of £1 million to enable schools to purchase

modems for their microcomputers between 1986–1988. The ‘Microelectronics Education Support Unit’ (MESU) was set up with £3 million, then £5 million annually; it later merged to form the ‘National Council for Educational Technology’ (NCET), becoming Becta in 1998. So what we see here is the emergence of a major organisation in the ICT educational landscape, an organisation that New Labour employed as a key partner in its ICT and schools projects.

A £19 million grant was given to English schools between the years of 1987–1993. This grant was an Education Support Grant (ESG) for IT in schools. Further funding from 1993 via ‘Grants for Educational Support and Training’ (GEST) was awarded. In 1992–1995 a ‘Computers in Primary Schools’ initiative was awarded £10 million. The high cost of computers is reflected in the money designated by these policies and initiatives and reflects how important it was to those making the decision to input such money that schools be computer rich.

Between 1996–1998 the ‘Educational Departments’ Superhighways Initiative’ (EDSI) provided £10 million of sponsorship from industry and elsewhere to schools. Though the rhetoric of ‘superhighways’ is now obsolete the use of such a term reflects the dynamic enthusiasm that policies about ICT brought about. Between 1996–1998 the ‘Laptops for Teachers Project’ spent a total of £27 million to provide portable computers for teachers and head teachers. In 1998 the ‘National Grid for Learning’ (NGfL) established £100 million (in first phase alone) for hardware, software and Internet connections for schools. Between 1999–2002 training for teachers and librarians cost £230 million from the New Opportunities Fund (NOF). The National Grid for Learning (1998–2002) has been replaced by the ‘ICT in Schools Programme’ at the DfES. The bigger expenditure of the late 1990’s reflects the rise in real costs of computing as well as the renewed vigour of the New Labour Government’s identification of its own agenda with the potential of the new technologies.

A New Labour Government committed unprecedented levels of financial support for ICT in schools since coming to power in 1997, including £1.367 billion through grants administered by LEAs known as the Standards Fund (DfES 2002). With matched funding from LEAs, this has been estimated as being approximately £1.8 billion in a

seven-year period up to 2004 (DfES 2002). In a recent review of this Selwyn (2008) cites a figure of over £5 billion of spending to introduce ICT into schools over the period from 1997 to 2007. The enormous spending is identified as being part of the government agenda.

A Conservative Government began this well-established evidence of enormous spending introducing ICTs into Secondary schools in England but the incoming New Labour Government developed the process. For example Selwyn (2008) identifies three phases of this New Labour initiative: the 1998 to 2002 'National Grid for Learning' initiative and associated NOF-funded teacher training programme; the 2002 to 2005 'ICT in Schools' drive and associated Curriculum Online and e-learning credit schemes; and the current 'Harnessing Technology' agenda underpinned by the DfES 2005 'e-learning strategy'. Government funding continued to the end of the Labour administration.

3.3 A BRIEF INTRODUCTION TO SOME OF THE INFLUENTIAL POLICIES FOR ICT IN ENGLISH SECONDARY EDUCATION

When people are discussing the topic of ICT in UK Education they typically use as key reference points reports of Government Committees and policy documents. The way these policies evolve through use and critique means that the documents alone cannot tell the whole story of why ICT and how ICT has been introduced into UK schools. Nevertheless, they are important as they help pick out the crucial elements that shape the way this reform process has taken place. Therefore, critics and commentators find explicit economical, political and societal rationales for having ICT in English Secondary schools embedded in documents used as part of the reform process. In this section the thesis briefly summarises some of the explicit rationales in some of the key documents used to explain governmental thinking about ICT and schools.

The McKinsey Report (1997) was important in summarizing the state of computers in schools in 1997 and then setting out recommendations in line with the New Labour vision. It pointed to the fact that up until then investment in ICT in schools was about

hardware and signalled that the new agenda placed ICT in an educational space, which it had not occupied before. Because of this, the link between ICT, education and the economy started to become established. For this reason this report is considered important in beginning the process of redefining educational values in terms of those of ICT policy values. This process will be discussed more fully in the next chapter, which looks at how a new policy and discourse was developed by the New Labour agenda. This report cleared space for new thinking about ICTs. By saying that the current use of ICTs was poor and that understanding of their potential was also poor, the report cleared a space for a new agenda for schools and education that linked education with a vision of a global economy and an information society.

The 'Connecting the Learning Society, National Grid for Learning' (1997a) was a document that the New Labour Government used to announce their ideas of transforming education in the UK using ICT related initiatives. It suggested that through ICTs a connected learning society would begin that would respond to the idea of a knowledge or information society and the requirements of a globalised economy of knowledge workers linked to an ICT superhighway. Education would be an essential part of this modernistic, connected 'weightless world' (Coyle 1997). Following on from this, discussions about this idea led to consultation on launching The National Grid for Learning (NGfL). Mee (2006) summarises the government intervention as intending to... *'stimulate the growth of the UK e-learning market... the outcome would be that demand driven by the public sectors schools market would sustain a larger e-learning market supplying a range of hardware, software and services'* (Mee 2006, p5).

The NGfL was presented by the government as the ICT tool that would enable schools to access resources fit for twenty-first century learning, an exciting and bold attempt to make schools fit for the purposes of a modern information age. The document made all this explicit:

'In the last 20 years, business has been transformed by new technology, particularly computers and communication networks. But education has been affected only marginally. We cannot prepare our children for the world of tomorrow with yesterday's technologies. We shall therefore create a new National Grid for Learning for the Millennium, to unlock the potential of these new technologies in

schools and more widely, and to equip pupils and other learners for this new world' (DfEE 1997a, p41).

The Stevenson report (1997) which was commissioned by the Labour Party whilst it was still in opposition, examined the extent of ICT use in schools and came to two key conclusions: that ICT in English schools was primitive and not improving and that there should be a national priority to increase the use of ICT in schools. The report also connected with the DfES National Grid for Learning (1997a) in its intention to centralise control of ICT policy in school. It was at this time and through these reports and consultation documents that New Labour began to redefine the nature of education to fit the political and economical priorities of globalisation. Importantly it suggests a break with the policy of introducing computers into schools begun by the Conservative Government, broadening the understanding of ICTs to be one of transformation of education. This in turn was seen as being part of a modernising agenda that sought to transform public sector institutions and culture to fit a new, global information society and knowledge economy.

The establishment of the National Grid for Learning in 1997 and 1998 was an important part of the strategy to link up schools and boroughs using ICT. The NGfL is a tool that enables teachers and pupils to connect with learning resources and has subsequently developed into a London Grid for Learning (LGfL) and can be seen as a forerunner of the introduction of Managed Learning Environments (MLE) into schools. MLEs include virtual learning environments (VLEs) and are software systems designed to support teaching and learning in an educational setting where pupils and teachers participate online.

These developments were presented as ways of inducting schools into the ICT superhighways of the new globalised information society. It was also crucially a way for the government to set up a market for high quality educational software and establish links between education and business and the businesses that would provide this. This Public/Private partnership approach is a clear example of how the business and market economics encroached upon educational values through a transformational agenda (DfEE 1998b).

Throughout these documents, the ideal of educational transformation is

foregrounded and throughout the development of the reform process this has remained an important feature. That 'transformation' remains a key element of the ICT policy is clear in Department for Education and Skills document (DfES 2002). The emphasis has continued through to 2005 where educational transformational change linked to a view of societal change remained a constant of explicit government literature, even when, as Mee (2006) notes, Office for Standards in Education (Ofsted) reports indicated no more than incremental change throughout that period (Ofsted 2004). The DfEE 2005 document maintained the transformational agenda. Up until the present day government policy retains the link between transformation and educational reform; for example, the current Building Schools for the Future (BSF) initiative, which is a massive capital investment initiative, is explicitly about transforming schools and the development of state of the art ICT is a major part of its brief.

Looking at these documents we can begin to identify certain reasons for the introduction of ICT into English Secondary schools and some of these are discussed in the next section.

3.4 REASONS FOR ICT IN SCHOOLS

In this section I will draw together the reasons given by government in policy documents and position papers justifying the introduction of ICT into English Secondary schools.

3.4.1 Economical Reasons

3.4.1.1 Vocational - Up-Skilling of Workforces

Throughout the documents the link between the economy and the introduction of ICT in English Secondary schools is made clear. The New Labour policy agenda for ICT in education '*...was driven primarily by concerns over enhancing competitiveness in a globalising economy...*' (Selwyn 2008, p1). The transformation of education to be 'fit for the twenty-first century' was something 'regularly espoused' (see Selwyn 2002). According to some critics (e.g. Selwyn 2008, p7; Jensen and Lauritsen 2005) ICT was thought to act as a relay for a whole set of policy requirements, '*...a*

package, shiny in its vagueness, of ideas-balls thrown in the air, in the hope that someone will catch them-and formulations that are yet unfulfilled with any practical or even ideal content' (Jensen and Lauritsen 2005, p368). Selwyn argues that ICT in schools was a way of New Labour changing policy focus towards adaptation to globalisation.

Selwyn cites Cole with approval: *'If globalisation is used ideologically as the raison d'être of New Labour economic policy, then modernisation is the conduit through which the policy is introduced'* (Cole 1998, p323). Cole refers to Tony Blair, the then Prime Minister, saying that the combination of ICT and education as being *'the best economic policy we have'* and as a crucial element in making *'the individual and business fit for the knowledge-based economy of the future'* (Blair and Schroeder 1999, p2). In the policies devised from 1997 to 2007, the link between economic well-being and ICT in education is developed. According to this view, critics see schools as *'core institutions of capitalism'* (Garnham 2000, p142).

The introduction of ICT was part of an attempt to up skill a workforce for the global economy and of changing the nature of schools to adapt to the supposedly new requirements of the global economy. Critics argue that the new policy space created by New Labour has meant that the thought that *'the best economic policy is a good education policy'* (Beckett and Kingston 2007) has become uncontested amongst policy makers across the political spectrum (Selwyn 2008, p10). ICT policy in schools are taken by many commentators to *'obscure the structures of power and real shaping economic and commercial concerns behind the ostensibly bland, neutral face of educational ICT as proposed by New Labour'* (Selwyn 2008, p8; cf Sussman 1997).

3.4.1.2 Administrative - New Managerialism and the Modernisation of the Public Sector/Private Sector Reform

Enthusiasts for the new technologies also presented ICT as a technological innovation that would lead to better systems of management in schools. Communication would be enhanced as ICT systems replaced the inefficiencies of older systems (Cunningham et al 2004).

Since the introduction of ICT begun in earnest under New Labour digital communication systems have been continually introduced and updated, from e-mail systems to MLE and VLE systems. Record keeping ICT is seen as a key way of delivering this Managerialism agenda; this is evident from the management systems and administrative software and hardware found in schools. Developments such as NAACE (the professional association for those concerned with advancing education through the appropriate use of information and communications technology), ICT Mark, SIMs (Schools Information Management Systems), Fronter, MLE/VLE all show that ICTs are being introduced to play a dominant role in the administration and management of schools at many levels.

Since 1997 these elements have become mandatory and schools without access to them are severely hampered. For example, an English Secondary school without a SIMs or equivalent system would have huge difficulties accessing examination results, compiling its registration lists in accordance to National requirements and so on. Continual professional development (CPD) for staff has regular updates of ICT for administrative purposes as a key feature for many staff and OfSTED are required to assess Secondary schools in terms of their use of this area of ICT as well as curriculum use (Fox 2004; for an evaluation of this use of ICTs see Cunningham et al 2004; Kirkup et al 2005).

3.4.2 Political Reasons

3.4.2.1 Nation-building and Citizenship

There are apparent political drivers for placing ICT in schools. The political ideal of *'moving the education service into the twenty-first century and creating a connected society'* (Jensen and Lauritsen 2005, p364) was a political ideal linked to a perception of economic realities and necessities. Selwyn (2008, p8) emphasises the ideological link between the economic and political aims of the New Labour agenda that places such a high premium on ICTs being placed in schools. In this he explicitly agrees with other theorists of education who understand the policy to place ICT into schools as being part of a broader agenda to change educational values themselves.

'The debate about the role of the new technology in society and in schools is not and must not be just about the technical correctness of what computers can and cannot do. These may be the least important kinds of questions, in fact. Instead, at the very core of the debate are

the ideological and ethical issues concerning what schools should be about and whose interests they should serve' (Apple 2002, p442).

Apple and Selwyn are both keen to interrogate the political agenda of the policies around ICT and schools, suggesting that to just examine the technologies is to miss an important political, ideological context out of which the New Labour policies are produced.

So dominant political themes of '*...widening participation, increasing personalisation, flexibility, collaboration, staff development and partnerships*' (DfES 2005) connect ICT with a language of increased access and democratic participation and the value of social justice. On-line learning, virtual schools and virtual universities reflect this political aspect of ICT. Use of ICT to address issues of poverty and the underprivileged are also reasons for introducing ICT into schools.

The idea of a 'digital divide' is a reason why ICT has been brought into schools, addressing the failure of certain social groups to have access to ICTs and also of the failure of certain groups to access meaningful uses of ICT (Selwyn 2004). Using ICT as a way of developing closer and better links between homes and schools, ensuring a more meaningful relationship between schools and the communities they serve are also part of this agenda (e.g. Ministerial Taskforce on Home Access 2008). This is both part of the political agenda of widening participation as well as a social reason focusing on providing an inclusive education to all through developing further links between home and educational provision.

3.4.3 Social Reasons

3.4.3.1 Digital Divide/Home School Links

As suggested in the previous section, political reasons address social problems, such as access to meaningful use of educational ICTs beyond schools. Though schools have been required to consider factors contributing to inequality, including socio-economic status, social capital and gender (Livingstone et al 2005) there is little literature about the impact of this work. A small-scale project run in Northern Ireland, the C2K initiative, has been evaluated and considered positive (PwC 2004). Larger scale work on this has not been recorded. There is evidence that home use of ICTs is different from that in schools and that ICTs are used with greater autonomy

by children in home contexts (Livingstone et al 2005).

3.4.3.2 Teaching and Learning

ICT was introduced in schools with a view to transform schools although there was little by way of explicit formulations of what this might mean for teaching and learning pedagogies. Documents and policies emphasised skill sets that were imagined to be requirements of the global knowledge economy. This links teaching and learning with the vocational rationale for ICTs in schools noted earlier. The pedagogic significance of ICT reforms is often rather thin and is often little more than emphasising the use of ICTs across the curriculum and the potential for increased learning. There is nothing explicitly detailing a link between a preferred model of learning and teaching and ICT in the policies although there has been much work by commentators and critics in making such links (e.g. Kerawalla and Crook 2002; Selwyn 2008).

The issue of ICTs and the kind of teaching and learning practices they require is complicated: if software packages, for example, are designed to be used in a certain way then of course ICTs can be said to determine certain practices. However, the question is about whether ICT has to be designed to specify a particular practice rather than whether it does. The rhetoric of politicians and practitioners seeking to support e-learning initiatives tend to emphasise the role of ICTs in raising achievements, compared to face-to-face communication even though there is little evidence to support these claims (Dutton 2008).

3.4.3.3 E-Learning – VLEs as Social Capital Resources

Some ICT platforms, such as VLEs and the development of on-line courses, have been produced as 'anytime, anywhere' resources providing young people the opportunity to develop collaborative learning (Davies et al 2005) and to share resources (Somekh et al 2005). In turn policy makers and enthusiasts for ICTs in schools provide a focus for the development of institutional resource and information sharing through advertising the development of virtual learning environments.

Yet in an overview of these developments a Becta report (Becta 2006a) concluded that there was *'little evidence of any impact of VLEs in schools...'* (Becta 2006a, p52). In the next section the thesis addresses the impact of the introduction of ICTs

into English Secondary schools generally.

3.5 IMPACT OF ICT ON EDUCATION

3.5.1 The Breadth of ICT in Education

There is strong evidence of the ways in which ICT is now established in English Secondary schools as a result of the initiatives and funding (see section 3.2).

According to Mee (2006), schools are now supporting ICT investment with their own funds. The Secondary sector spends £281 million annually on hardware and infrastructure and £51 million on curriculum and software (Selwyn 2008, p705). According to Laurillard (2008, p34), the UK generally *'...has better figures than most countries in terms of the technological infrastructure for education'*. The establishment of organisations like Becta (British Educational Communications and Technology Agency) and the charity Futurelab supports schools in their development of ICT use and helps maintain the high visibility of ICT in the educational landscape.

As noted earlier in this chapter, ICT is now part of the core curriculum. It is embedded into the cross curricular model. Ofsted inspects it. There are school accreditations for the effective use of ICT. There are more computers now in peoples homes linked up with schools. It has become a management and leadership tool, a resource for teaching and learning and for school administration (Condie and Munro 2007, p76). This all suggests that ICT is now a major presence in English Secondary schools. The major achievement of this reform process has been to place ICT at the heart of education.

There are claims for some improvement in achievement due to ICT in schools but these tend to be based on small-scale projects (See for example, Condie and Munro 2007, p25; Laferrière, Breuleux, and Bracewell 1999; Scardamalia and Bereiter 1996; Bereiter 1998; WestEd 1998; Berge and Collins 1998; Brown 1994; Baker, Gearhart, and Herman 1994; Kulik 1994; Sivin-Kachala 1998). This seems a small point but is important when considering the claims being made for ICT's impact in schools. It tends to be on the base of such small-scale studies and projects that

many of the large claims about the transformational potential of ICTs are sustained.

3.5.2 The Limitations of the Impact of ICT on Education

Claims that ICT will lead to a 'transformation of education' have largely failed to materialise if transformation is taken to mean more than mere access and presence (Selwyn 2003, p705). *'Only one in six schools and colleges are getting the full benefit of using technology in a truly effective way'* (Crowne 2007). Initiatives like UK Online are making little difference to social inequalities (UK Online 2007) and the UK continues to fall behind other comparative countries in ICT skills (Leitch 2006). The evidence of significant positive effects on pupil achievement is at best inconclusive. A major review of the impact of ICT on attainment in English schools concluded that *'...the weight of evidence is insufficient to draw firm conclusions'* (Condie and Munro 2007, p24).

Cuban notes how current enthusiasm for ICTs is similar to enthusiasm for dominant technologies in the past, which have not been fulfilled, (Cuban 1986, 2001) *'As for enhanced efficiency in learning and teaching, there have been no advances...in the last decade...The link between test score improvements and computer availability and use is even more contested'* (Cuban 2003, p178-179). Leys comments that the link between education and technology threatens educational values, citing Polyani in this claim.

'To allow the market mechanism to be the sole director of the fate of human beings and their natural environment, indeed, even of the amount and use of purchasing power, would result in the demolition of society... Robbed of the protective covering of cultural institutions, human beings would perish from the effects of social exposure; they would die as the victims of acute social dislocation through vice, perversion, crime and starvation. Nature would be reduced to its elements, neighbourhoods and landscapes defiled, rivers polluted, military safety jeopardized, the power to produce food and raw materials destroyed' (Karl Polyani 1957, p73, quoted in Leys 2001, p4).

Wellington (2005) writes that education is a value-laden process and cites Paulo Freire (1996),

'...it can never be a neutral activity; nor are science and technology neutral, let alone science and technology education'.

These general criticisms are based on specific studies. Though the policy discourse has highlighted the vocational purpose of introducing ICT into schools there is little evidence that it has succeeded in these aims.

There is a strong body of evidence, going back two decades, to show that a narrow, skills-based approach to ICT education in schools is counterproductive (see, for example, Wellington 1989; Somekh 2000; Dillon 2004). There is growing evidence that the simplistic model of transferring skills from school to workplace that is a central part of the ICT initiatives in secondary schooling is a poor model (e.g. Seely 2003). There is also growing evidence that for many applications there is no transfer of skills (e.g. Lave and Wenger 1991). Where there can be - in certain aspects of science teaching, for example (Newton and Rogers 2001) - the term 'application skills' has been developed to refer to a set of general, strategic skills of value in using ICT to explore scientific questions. What this presupposes is an avoidance of a narrow, skill based training (Wellington 1989, 1993).

The impact of ICT on education has been negligible according to the literature evaluating the impact of ICT into English Secondary schools (for example see Becta 2006a). ICT was claimed to be a motivational tool that would increase performativity, especially when used with hard to reach pupils, the disaffected and disengaged (Passey et al 2004; Valentine et al 2005). This links with the idea of ICTs helping pupils fulfil their potential (DfES 2003b) and is linked to key performance indicators of Value Added (VA) and Contextual Value Added (CVA) which became embedded in Ofsted inspection for schools during this period. The notion of 'performativity' in education at all levels has been a driver in English educational institutions since the 1980s (Lankshear et al., 2000). 'Performativity' (a term coined by Lyotard 1984) calls for all ICT in schools, colleges and universities to make the 'optimal contribution to the performance of our social system' and ICT is thought able to add value to learning (see Newton and Rogers 2001; Wellington 1999). Critics such as Cuban, Fullan, Moursand and Hernandez-Ramos produced studies providing evidence that ICT was not making significant cultural changes in schools (Fullan 2001; Cuban 1993; Ertmer 1999; Cuban 2001; Moursund 2002; Hernandez-Ramos 2005).

The perceived failure of the massive investment to bring about transformation of

education has been explained as being caused by a variety of different factors: institutional and organisational factors of schools and institutions being constrained by their physical, spatial and temporal aspects (see Selwyn 2007a, 2007b, 2007c) and the multi-agency requirement of these initiatives that failed to come about (Younie 2006). The collaboration between schools and the private sector and business has not been successful despite hopes that private business would be established as secure partners for schools (Younie 2006).

ICT was also expected to develop the links between home and school but the literature questions the extent to which 'a connected learning' was developed (Franks 2004, p169). Though there is much literature about the potential for this to happen, in terms of the potential for ICTs to develop society in which learning is increasingly accessible and adapted to individual needs' (e.g. Becta 2001, 2006a) and create an 'improved quality of life' (DfEE 1997a), there is little evidence that this has actually occurred. Selwyn (2000, p96) notes that the literature so far on the impact of ICT on developing this home/school connected-learning potential indicates no widespread development. Wellington (2001) and Kerawalla and Crook (2002) found that home computer use had very little in common with school use and even though Wellington (2001), estimated that there were seven times as many computers in UK homes as there were in schools there was little evidence of home use supporting learning in schools.

Work on issues around the 'digital divide', (Selwyn and Facer 2007) again indicate that ICTs impact on developing learning links between school and home have been limited so far, confirming a general perception of 1997 that the overall state of ICT in schools was 'primitive and not improving' (Stevenson 1997, p6) and that this had remained the case a decade later.

There is also a perception that the potential of ICT to motivate innovation and pedagogical transformation for teachers has instead become linked to the issue of initiative overload. ICT policies may still be jokingly referred to as 'IT into cupboards schemes' (Collins et al., 1997). On top of this ICT has been linked with increasing the administrative workload of staff in schools and the negative impact of Managerialism (Ball et al., 1994).

What becomes clear in the critical literature is that there are contradictory strands to ICT use in schools: one strand that emphasises the innovatory use of ICT, another that sees ICT as supporting more traditional views of educational and learning which results in *“an uneasy, sometimes quite contradictory, combination of [...] imperatives”* (Buckingham and Scanlon 2003, p192). This failure to achieve an agreed and unifying vision for the introduction of ICT can be seen as contributing to the failure of establishing clear criteria for success.

Research into the ICT initiative into English schools is further complicated by the wide variety of strongly held attitudes towards the initiatives, from the supportive (e.g. Papert 1980; Heppell 1999) through the agnostics (e.g. Daiute 1997; Oppenheimer 2003) to the antagonists (e.g. Cuban 2001; Cuban et al, 2001). This research can as a result of this produce a confusing picture. Potential and actual benefits are continually confronted and there is no decisive judgment. This supports the observation that discussions about the uses of new technologies are ‘essentially’ contested (Gallie 1955). Summarising this perspective Oppenheimer writes:

‘When technology’s boosters look at a computer, they see almost nothing but opportunity, an educational messiah. Technology’s critics, meanwhile see merely danger, a mechanical devil that encourages the death of the humanistic traditions. ...The truth of course has its feet in both sides of the debate’ (Oppenheimer 2003, pxvii).

The research offers no agreed measures of effectiveness (Underwood and Dillon 2004; Davies et al 2003). Lesgold (2000) argues that most research can’t be generalised over the whole system. Some argue that the quality of the research is poor, offering a contested argument that links the low status of the old tertiary sector Polytechnic College to ICT to perceptions of those running the RAEs (Gardner and Galanouli 2004).

Another strand of criticism of the research of ICTs in schools argues (as was argued at the CAL ’01 conference) that:

‘too often those of us involved in educational technology live in the ‘here and now’ or in the ‘maybes of tomorrow’. Quiet reflection on where we have been and what we can learn from the past is often not seen as a priority. In ignoring early lessons, of course, we build our foundations on sand. It is vitally important that we now begin to build a history of educational technology use’ (Underwood and Scanlon 2002, p1).

3.6 CONCLUSIONS

This chapter has shown that nearly everything discussed regarding ICT in English Secondary schools is contested. In particular it is hard to know exactly whether any of the ICT reform agenda has been successful or not because the success criteria are difficult to identify. If success is defined in terms of ICT being a dominant feature of English Secondary schools then this has been achieved, at least to some extent. On the other hand if success is about transforming education in deeper senses, such as in relation to pedagogical practice or impact on the lives of young learners both within and beyond the classroom, judging success is more difficult.

What is clear is that ICT and education have become fused by the political agenda of the last twenty years and that this is likely to continue into the future. As we have seen, some people have argued that ICT was never intended to be a precise programme for educational change but rather was to be used as a symbol of a new kind of world (e.g. Jensen and Lauritsen 2005, p368). This perception links to a criticism of the kind of research that has predominated the literature looking at ICTs in schools and education generally. Very early on critics such as Selwyn (1997) were arguing that much of the literature about the topic was based on quantitative rather than qualitative research and that there was resistance to understanding ICT in terms of broader theories of society and sociologies of technology (see also Abbott 2000). Although Selwyn's points have been contested (e.g. Underwood 2004; Gardner and Galanouli 2004) this thesis agrees that theory is important and is attempting to understand the introduction of ICTs into English Secondary schools in terms of social theory.

This chapter has given a brief history of the introduction of ICT into English Secondary schools in order to answer RQ2 and RQ3. The chapter has discussed the government initiatives, its defining policies and the assessment of its success as presented by commentators and critics. The chapter has given a brief survey of the way ICT has been introduced into English Secondary schools. It has noted that since the New Labour initiatives beginning in 1997 ICT has been a central feature of educational reform and that this reform agenda has been one that aimed at

transforming education. Economic, political and social reasons for this agenda have been briefly examined and the positive and negative results of the initiatives summarised.

What follows in the next chapter, is a more detailed discussion of how these policies became practice by discussing it in terms of Ball's Policy Sociology. In so doing the thesis will introduce the idea of a policy discourse and revisit some of the issues discussed in this chapter through the lens of this critical tool. This is done to answer RQ4.

CHAPTER 4:

ICT POLICY DISCOURSE

4.1 INTRODUCTION

In the previous chapter the thesis gave a brief historical overview of the introduction of ICT into English Secondary schools in order to answer RQ2 and RQ3.

What commentators and critics of this have suggested is that the policy of putting ICT into schools was part of a broader process. It is this that the present chapter discusses. The chapter investigates the reasons behind such enormous investment in ICT and examines the link between ideas about modern society and the role of ICT and education in that society. Using Stephen Ball's 'policy sociology' it will then examine the way a new kind of policy making occurred under the New Labour Government, beginning in 1997. It will examine the claim that a whole range of public sector reforms that decisively altered the public sector, including education, consciously created a new policy discourse. The focus will be to look at how the purpose of schools was changed and the role that the introduction of ICT played in doing this. In doing so, the chapter will answer research question 4.

The thesis will then look at how the ICT reforms have been discussed and criticised. In particular it will try and show how understanding the reforms in terms of a new policy discourse informs both this support and criticism. Certain key terms are used in the following way. 'Ideology' is used to refer to a cluster of key ideas that constitute the way reality is perceived by a group or individual. So when the chapter talks about the ideology of the New Labour project it is referring to the cluster of key ideas that constitute what New Labour believe about the world. 'Discourse' is used as being about the language, images and other social communicative practices that are used to produce and maintain that ideological stance.

4.2 REASONS FOR PRIORITISING ICT IN SCHOOLS – THE NEW INFORMATION SOCIETY/KNOWLEDGE ECONOMY AND GLOBALISATION

As noted in the previous chapter the introduction of ICT into English Secondary schools began as a major part of the incoming New Labour Government determination to meet the perceived challenges of the knowledge economy and globalisation. The economic imperatives of a 'knowledge economy' were the reasons given in policy documents and briefing papers for a radical transformation of the public sector, including education. In fact education was seen as a key element in this reform as it was seen as the key to up-skilling the UK workforce in order to make the UK economy competitive. Research literature supports the idea that Policy documents and position papers all support this move towards the 'economism' of education, (e.g. Selwyn 2008). When the then Prime Minister writes '*Education is our best economic policy...*' (Blair 2005) he makes explicit this feature of education policy.

4.2.1 The New Information Society/Knowledge Economy Construct

The terms 'knowledge economy' and 'information society' are key elements of the New Labour policy agenda and form an essential part of its ideological understanding of modern society. Although they are not the same thing, they were used as such in promoting a new reform agenda and this chapter also makes little distinction between them (for a discussion see Peters 2001). They are key elements of the ideological understanding of modernity that the New Labour policy makers accepted and connect up with ideas about the digital world, of connectivity, '*...the interconnectiveness of everything*' (Dreyfus 2001, p10), networked worlds, and the interconnection of people, objects, information and organisations alongside the 'flat world' thesis that barriers of time and space are dissolved through the internet and other ICTs (for discussion of this see e.g. Kelly 1995; Cavanagh 2007; Selwyn 2009a).

According to the 'knowledge economy' construct, knowledge and education can be treated as a business product whereby educational and innovative intellectual

products and services can be exported for a high value return. This construct has clear roots in the 'Information Society' sociological construct of Bell and many of the thinkers associated with it were early enthusiasts for Bell (Its historical roots are discussed in the next chapter).

For example, Drucker in "The Effective Executive" (1966) opposed *hand* workers with *head* workers, arguing that the time of the head worker had arrived. The construct claims that information and knowledge are replacing capital and energy as primary wealth creating assets (e.g. Leadbeater 2000a). Leadbeater claims the new economy is '*a new stage of capitalism*' involving '*living on thin air*' (Leadbeater 2000b). This metaphor is picked up by Coyle's idea of 'weightlessness' (Coyle 1997) which contrasts early industrialism's material value found in heavy stuff (iron, steel and coal) with the weightlessness of the new industrialism's valuable stuff (information, knowledge, communicative expertise).

The centrality of ICT in this new economy is also part of this construct of a 'knowledge economy'. The necessary mobility of information flows through ICTs. It is the defining technology, enabling flows of information that were impossible to achieve without it. Knowledge and the flow of information are key elements of value in this type of economic and social reality. Through the development of ICTs, in particular the Internet, every point in the interconnected system becomes 'a potential recipient and provider of information' (Selwyn 2009a). This is reminiscent of Bell's 'Information Society' construct, and is now subject to many criticisms (Kumar 2005), which will be examined in detail in the next chapter.

Peters (2001) offers a sympathetic critique of the role of the knowledge economy in 'national education policy constructions'. By updating many of the themes of Bell's 'Information Society' Peters suggests that, despite critics dismissing the construct as useless to sociology, the term retains some usefulness in understanding ICT reforms in schools. This approach is supported by Webster who writes that:

'...the concept 'information society' is of little use to social scientists, and still less to the wider public's understanding of transformations in the world today. The term perhaps has some heuristic value for the social scientist (Lyon, 1988: 8), in so far as it encourages scholars to focus attention on an indisputably important feature of the world today – information' (Webster 2002, p22).

Whether useful analytically to sociology or not, the idea has been useful to politicians, who built a whole policy discourse around it (e.g. Ball 2008). For this reason alone, it is important to recognise it in a thesis that engages with these policies.

Peters begins by quoting Foucault's remarks on Marx:

'...we live in a social universe in which the formation, circulation, and utilisation of knowledge presents a fundamental problem. If the accumulation of capital has been an essential feature of our society, the accumulation of knowledge has not been any less so. Now, the exercise, production, and accumulation of this knowledge cannot be dissociated from the mechanisms of power; complex relations exist which must be analysed' (Foucault 1991, p165).

This perspective takes up the theme of the centrality of knowledge to society which is the defining feature of the 'Information society/knowledge economy'.

Peters claims that the economic importance of education is fundamental to understanding 'new global knowledge economy' (Papadopoulos 1994). He cites the Organisation for Economic Co-operation and Development (OECD) and World Bank, stressing the link between education and economic success and the role of education to develop 'human resources'. Education for these bodies is about 'up skilling' and the production of research and scientific knowledge.

Drucker (1993, 1994) and Porter (1990) link economics and productivity to education and show how competitiveness in the international marketplace has been transferred to educational discourse. Thurow (1996, p68) argues for a technological shift towards man-made brainpower industries. The role of national governments is then seen as restructuring national education systems and redesigning the interface between universities and business in the light of these shifts.

Handy (1984) suggested the same sort of shift. A key assertion of Handy, picked up by many, was his identification of a change in the nature of employment so that a full employment society was becoming the part employment society, labour and manual labour was being replaced by white collar knowledge work, industry was declining and services rising, hierarchies and bureaucracies were losing their appeal,

networks and partnerships were replacing them and people having a one organisation career was becoming rare whilst career changing was becoming more fashionable/necessary.

All this suggested that a new education agenda of choice, flexibility, variety, 'home to classrooms' and 'workplace as school' (ibid p146-147) would be required. As we saw in the previous chapter, these are themes that played a large role in policy documents and discussion papers produced by and for the New Labour Government from 1995 onwards.

Drucker, Cairncross, Canter and Leadbetter are all quoted by Hargreaves (2000) as discussing education in terms of this discourse and education's need to promote new forms of knowledge and learning. Education became something that involved understanding learning in terms of meta-cognition, thinking about thinking, integration of formal and informal learning skills, knowing what and knowing how skills, access and evaluation of knowledge, of having different types of intelligence, (e.g. Howard Gardner 1983), of developing team work, creativity, of knowledge of how to transpose and transfer knowledge, of being able to cope with ambiguity, unforeseen events, multiple careers, of being able to redesign oneself, make bespoke education and training paths for oneself and so on. Education was therefore to be understood as something reflecting some of the core ideas of the new digital information society and knowledge economy. ICTs were embedded in such an understanding but so were the notions of 'reflexivity' and 'connectivity'. In a recent discussion of these issues, Selwyn has called this way of understanding education 'The Educational Seductions of Internet Connectivity' (Selwyn 2009a).

Knowledge management and information creation and flow were positioned as being keys to embedding the central idea of the transferability of knowledge across contexts. Peters acknowledges that these ideas have been around many years, linking up with the 'constructivist' educational theories of Vygotsky, Piaget, Bruner et al. However Peters claims that linking up the knowledge and economy via policy is a new twist in this familiar story. What is driving the development of these ideas is no longer learning theories but these economic theories.

So the new feature in this vision of education is the link between the discourse of the 'knowledge economy' and 'national educational policy'. Peters identifies five key features to his understanding of the knowledge economy: the economics of abundance, the annihilation of distance, the de-territorialisation of the state, the importance of local knowledge and the investment in human capital.

Peters references the UK governmental 1998 White Paper, 'Our Competitive Future' as a defining policy document that fused educational policies to the knowledge economy discourse, as discussed in the previous chapter. The new discourse was about a new growth theory, highlighting the role of education in the creation of human capital and in the production of new knowledge (Solow 1956, 1994). The World Bank report 'World Development Report' of 1988 is also referenced as claiming that a consensus was emerging about the importance of education for creating human capital directly affecting knowledge accumulation, productivity and growth. Education in the literature explains the growth of national income (e.g. Romer 1986, 1990).

This critique implies a version of Lyotard's 'logic of performativity' (Lyotard 1984) in the post-modern condition (Peters 1995, 1996, 2001). Briefly, Lyotard's theory is that knowledge is legitimised by how well it performs and in the context of a society dominated by ICTs, as he sees it, knowledge is judged by how effectively it minimises the required inputs for any tasks whilst maximising outputs. Efficiency is its prime value.

The question then becomes 'how does this prescribe education policy?' Discourses of the knowledge economy turn knowledge and information into capital units. The discourse develops an economics of information and knowledge.

A sociology of knowledge and education developed to understand these new features. There were grand theories developed such as Nico Stehr's 'knowledge economy' and Robert E Lane 'the knowledgeable society' of 1966. Also Drucker (1969) Bell (1973a), Touranin (1974) and Masuda (1981) all produced grand theories of how a knowledge and information society might work.

The dominant role of Communications and ICT is unquestioned in this discourse. Peters makes clear the huge literature reflecting this (e.g. Castels 1997, 1998, 2000; Peters and Roberts 1998; Blake and Standish 2000). The idea of a knowledge economy was therefore seen as being linked firmly with the dominant technology and this in turn ensured that when New Labour turned to these ideas it linked them decisively with ICT. This is a key connection to many critics of the policy discourse of New Labour who claim, like Webster (2001), that the notion of an Information Society is misleading and that therefore the reasons for having ICT in schools are misconstrued too.

There is an extensive literature that has challenged the idea of a knowledge economy and an information society. For example, Coffield (2000) discusses several ways it has been understood. The main criticisms in the literature are that it constructs a narrow instrumental approach to the economics of knowledge and intellectual culture, in respect of which knowledge is commodified. So, for example, 'everything is viewed in terms of quantities; everything is simply a sum of value realised or hoped for' (Slater and Tonkiss 2001, p162).

Clearly, applying it to education changes the purpose of education. Education becomes a type of 'Academic Capitalism' (Slaughter and Leslie 1997). In a dramatic shift of purpose, education becomes the acquisition of a commodity for a job rather than a preparation for life. It excludes the liberal conception of education discussed in chapter two which includes political and cultural purposes. This is something the thesis will return to in the next chapter when it examines Ball's work on policy discourse.

As the thesis also noted earlier in the case of Webster (2002) the evidence of the existence of an actual knowledge economy (as opposed to just the construct of one in a dominant reform policy discourse) is claimed to be weak at best. The construct is found to '*overemphasise and over-simplify...*' (Kepp 1997) empirical evidence shows that the proportion of economic activities involving new technologies and 'new science' (e.g. bio-engineering) remains relatively modest. Peters (2001) writes about this as a 'hyper-discourse' where entrenched clichés about the future is converted into policy and in turn the language of policy becomes the language of futurology.

Following on from this, critics argue that by continually focusing on a knowledge economy and the essential role of ICT in this new economic reality, inequalities between a wired world and unwired world are created. The construct creates unbridgeable gaps between people and also between countries (Grant 2007; Selwyn 2002).

To conclude part one of this section, then, the New Labour policy reform introducing ICT into schools has been highly influenced by notions of the 'knowledge economy', even though scholarly criticism disputes the reality of such a notion. Next, another important aspect of the New Labour policy reform is discussed, one that is linked to ideas of a 'knowledge economy' but can be discussed separately. This is the construct of 'Globalisation'.

4.2.2 Globalisation as the Second Key Feature of the Current New Labour Policy Discourse

Two ways of understanding the idea of Globalisation are found in the educational discourse; Globalisation as a one world thesis and Globalisation as the entwining of the local with the global.

4.2.2.1 Globalisation as One World

The first way of interpreting globalisation in the educational discourse is as a 'one world' thesis which discusses the future of nation states in terms of four interrelated literatures, about changes in the economic, political, cultural and social realms. Much of the literature about this aspect of policy discourse construct asserts that the economic realm dominates (e.g. Ball 2008, p25). 'Globalisation' is thus a construct in which the limits of the Nation State are discussed. The idea is that Globalisation overcomes the limits of a national boundary and raises the question of the nation state's ability to steer the economy and its politics. The construct is used to frame questions such as, 'Can a nation hold onto cultures given the proliferation of Global corporate power and Global franchises like MacDonald's and so forth?'

So for instance, Giddens writes:

'Globalisation is not just an "out there" phenomenon. It refers not only to the emergence of large scale world systems, but to transformations in the very texture of everyday life' (Giddens 1996, p367).

For a small number of people it is claimed to have created a new space and set of possibilities beyond national identity or tradition (Elliot and Lemert 2006). Zygmunt Bauman talks about 'globals', a new kind of citizen of Globalisation. Living as a global involves new forms of work within the knowledge economy involving head work rather than hand work, discussed in terms of 'symbolic analysis' (Reich 1991, p171), 'articulation' rather than 'creation'. In the context of this reading, educational services are an increasingly important international trade commodity. This becomes reflected in increased student mobility and teachers coming from overseas.

This position is criticised in general because the erosion of the nation state's role is overemphasised, as is the impact of Globalisation. This is the literature of the myth of the powerless state (e.g. Weiss 1997 or Harvey 1996, who coined the phrase 'globaloney'). The importance of this point of view in terms of ICT being introduced into English Secondary schools is that it is often given as a reason for ensuring students are ICT literate. Competition in the global economy is seen to require such literacy. This view has been popularised by writers such as Friedman (2005).

4.2.2.2 Globalisation as the Entwining of Local with the Global

'Globalisation' has also been understood in a relational or vernacular way. This proposes that Globalisation is not considered as having a deterministic logic that *inevitably* replaces the local. Instead it reconsiders Globalisation as something that *'... invades local contexts [but] it does not destroy them; on the contrary, new forms of local cultural identity and self-expression are causally bound up with globalising processes'* (Giddens 1996, p367-370).

This takes Globalisation as allowing for a global generic feature to be reflected in a local idiom. An example would be the difference between Disney theme parks in USA and France where although the same global corporate franchise operates they are able to reflect local, national sensibilities to some extent.

In this discourse the claim is that 'generic global policies are polyvalent, they are translated into practice in complex ways' (Ball 2008, p31).

To conclude this section then, the thesis has proposed that two big ideas, that of a

'knowledge economy'/'information society' and that of 'globalisation' have been key to New Labour's introduction of ICTs into English Secondary schools. They are dominant parts of the Ideological beliefs driving the New Labour policy agenda. In the next section the thesis examines how this has happened, using Ball's 'policy sociology' approach.

4.3 NEW POLICY DISCOURSE FOR THE NEW INFORMATION SOCIETY

4.3.1 Public Sector Reform and New Ways of Making Policies

New Labour's initiative to introduce ICT into English Secondary schools is understood as being part of a wider general policy discourse. This thesis makes a distinction between English education and rest of UK because it focuses on ICT policy in English Secondary schools. However it understands that policy development in England reflects a broader context, recognising that educational policy in England reflects world trends in both form and content and is linked to policy making and perceived economic needs that go beyond educational policies.

The new policy discourse has been hugely influential in three ways: it changed the nature of policy making; it changed the way public sector was conceived; and it also changed the way policies were understood by policy sociology. The thesis shall briefly examine these three strands below, beginning firstly with policy making itself.

4.3.1.1 Hyperactivism, Policy Epidemics and a New Way of Policy Making

New Labour introduced a new kind of policy making in order to respond to the perceived challenges of the knowledge economy and globalisation. This is a policy making at a hugely increased pace of change that has been called 'hyperactivism' (Dunleavy and O'Leary 1987). As an example of this terrific rate of policy making that has been so characteristic of the new policy agenda, in just a single month, July 2000, there were 106 items, including 39 Statutory Instruments, concerning policies related to education and employment published by the DfES.

Hyperactivism has led to Levin's notion of 'policy epidemics' (Levin 1993). This term refers to the flood of interrelated reform ideas. Both hyperactivism and policy

epidemics are part of a new kind of policy technologies. They 'involve the calculated deployment of forms of organisation and procedures, and disciplines or bodies of knowledge, to organise human forces and capabilities into functioning systems' (Ball 2008, p41). New Labour's project has been to use these technologies to transform the very nature of the public sector and this crucially includes education. Policies and supporting documents have been continually produced in order to create a seemingly never-ending rollercoaster of reform. The impression of constant movement and innovation has been an end in itself for this approach to policy making (Ball 2008).

4.3.1.2 The General Policy Discourse, the Educational Discourse and the ICT in Education Discourse

The New Labour ideology of knowledge economics, globalisation and the central role of the digital technologies has developed a discourse to establish and maintain the Ideology. Policy has been a vehicle for the discourse, delivering the key messages and rendering invisible alternatives to it.

So of course the effects of the policy discourse have not just transformed the way policy making is conceived. The effect of hyperactivism and policy epidemics has led to claims that 'the traditional time-space configurations of schooling are being significantly reworked by policy. The ecology of education, what it looks like, when and where it happens, is being changed and, as a result, so too is the learner' (Ball 2008, p3).

The policies have been used to create a dominant discourse. This policy discourse, as does any discourse, privileges certain ideas, topics and speakers and excludes others. It reveals an attempt to escape from old social divisions subordinating talent to social status and where individual and social wellbeing are elided. The policy discourse revealed by Ball (2008) redraws boundaries in new ways. Ball argues that through this the public sector is re-imagined. Education policy is therefore to be read in the light of this overall discourse.

The discourse has been managed and maintained through the hyperactivism and policy epidemics. 'Language is deployed in the attempt to produce certain meanings

and effects' (Edwards et al 1999, p620). The policy discourse produces positions in which people are invited to speak, listen, act, read, work, think, feel, behave and get their values shaped (Gee et al 1996, p10; Ball 2008, p5). Policies affect teachers, learners and parents, choosers, leaders, consumers, managers, lifelong learners and entrepreneurs, in fact anyone and everyone who gets involved.

Following the literature about this (e.g. Edwards et al 1999; Ball 1997) the thesis assumes that policy discourse produces a sense of what is inevitable and necessary. This leads to looking at the ICT policy for English Secondary schools during the period the thesis is focused on and asking *what* the discourse was making inevitable and necessary. The discourse was more than just focused on the educational. It entailed a *'re-narration of the public sector... to consolidate an unstable equilibrium of compromise among different social forces around a given economic, political and social order'* (Jessop 2002, p6). Jessop identifies the purpose of the policy hyperactivism and policy epidemicism of the time as an attempt to rethink 'compromises' between different domains within a social order.

Policy sociology analyses policy as a process, not an object. This is partly because problems policies by which I mean policies addressing problems, are designed to fix change. It is also because they are not uniformly applied and so no analysis must overestimate the rationality of policies. Indeed they are often messy, contradictory, confused and unclear (Ball 2008). Ball presents a good guide to the significant contours of the subject guiding the background assumptions of the thesis.

Ball further argues that the UK government's approach to public service reform throughout this time was about developing policies that enabled joined up reform based on performance management, voice and choice, contestability and workforce 'remodelling' (2008). Managerialism was a new way of organising institutions in this discourse, eroding notions of public service and substituting them for Lyotardian performativity (Lyotard 1984), means-end efficiency, target setting and so on (Gewirtz et al 1995; Gewirtz 2002). Education was part of this joined up reform programme. What this suggests is that the rationale for any education policy is not discernable purely from within education itself. The causes for certain reforms were not domain specific as such and to discuss all educational change by reference to educational

reasons distorts reality.

So, for example, issues of equality became prominent in policy developments generally, not just in education. 'Equality' was understood in terms of a generic policy discourse of economic participation and performance. In education policy, therefore, equality in relation to race, gender and social class were understood in terms of that economic discourse rather than in terms that a purely educational focus might have given it, where perhaps issues of social justice would have been prominent. Education policy gave emphasis to parenting responsibility and social exclusion, where Academies and Trusts were created as solutions to underachievement in socially disadvantaged areas in order to maximise the economic human resources of the state (Ball 2008, chapter 4). These were all part of the dominant Ideological priorities of the New Labour agenda, which was primarily economic, to do with a new kind of value and a Global extension of the market. 'Equality' as a means of social justice has been subtly substituted for a different meaning of 'equality', one understood in terms of up-skilling its workers in the context of Global knowledge economics.

Ball's analysis of education policy sociology confirms some of the dominant themes already identified in the thesis earlier. He argues the policies deliberately changed the role of the state towards schools by their production of 'new learners', the subordination of education to the economy, a policy convergence across countries and sectors, the privatisation of public sector education and the joining up of social and educational policies.

As already noted in the thesis there is a considerable literature about the intra-dependence of Education policy, economic necessity and general public service reform and Ball draws on it. The generally agreed perspective of this literature is that 'within policy, education is now regarded primarily from an economic point of view' (Ball 2008, p11), that there has been an '*...astonishing displacement of "society" within the late modern educational pattern*' (Cowen 1996, p151) and that education has become subjected to '*the normative assumptions and prescriptions {of} economism*' (Lingard et al 1998, p84).

Policy sociology discourses are considered important in this literature for two reasons. Discourses contribute to '*...the construction of the need for reform, particularly in the case of globalisation and international economic competition and the requirements of the knowledge economy*' (Ball 2008, p13). They also provide the obvious and necessary policy responses and solutions. In this way, the discourse creates the problems to which they are solutions. The introduction of ICTs into English Secondary schools is from this perspective a solution to a problem defined by the discourse. If a global knowledge economy requires ICT literacies and the education system isn't equipped to meet this requirement then reforms need to follow to resolve the problem. Discourse makes other points of view disappear and makes that of the discourse appear natural and one of '*common sense*'.

Olssen argues that through analysing educational policy discourse it is possible to see that '*...globalisation and education comprise the dual mantras of 'third way' politics*' (Olson et al 2004, p245). Ball's analysis discovers a rhetoric of reform (general public policy reform, not merely educational) coupling improvements in social justice, equity and the maximisation of participation (Ball 2008, p17) to enterprise and economic success using the idea of a 'meritocracy'.

Summary

So, the policy discourse has created a new social space in which a mobilised set of rationales and understandings has brought about a new hegemonic understanding of social spaces, including the space occupied by education and its values. And as noted, this constructed space is broadly economic. Though there is no settled agreement about the precise definition of the discourse, through contested understandings of a kind of knowledge society certain key features are identifiable as being necessary. A decisive link between education and economic success is asserted and the economic space articulates a market form, e.g. (Sayers 1995, p104) '*...markets are a social construction whose birth is difficult and requires considerable regulation and involvement by the state*'. This 'considerable regulation and involvement' has been taken to an extreme by the New Labour reformists who have used 'policy epidemics' and 'hyperactivism' to construct and then maintain the discourse.

The new policy paradigm brings about a 'new moral environment' (Ball 2008, p45) to be understood in the terms of market economics, of producers and consumers, self-interest;

'...an increased ...orientation towards the internal wellbeing of the institution and its members and a shift away from concern with more general social and educational issues within 'the community' (Ball 2008, p45; Gewirtz et al, 1995; Gewirtz 2002; Reay 1998; Willmott 1993)

Lyotard (1984) writes about how the discourse creates structures and systems that *'...make individuals "want" what the system needs in order to perform well'.*

Briefly, then, the educational policy discourse has brought about the following effects. Firstly, a decisive link between cultural and political reform has established 'managerialism' as a new mode of power within the discourse's social arrangement. New managerialism's role is to shift power away from professional-ethical regimes of public services, including schools, to replace these regimes by economically orientated 'entrepreneurial-competitive regimes' (Ball 2008, p45; Clarke et al 2000; Troman 2000, p349 and his 'culture of distrust'). Also the articulation by the policy discourse of 'performativity' and accountability has added to this shift from an ethic of service to one of business competitiveness (e.g. Ball 2008; Husbands 2001; Shore and Wright 1999).

Secondly there has been a decisive link between the new economic reality and a 'new' social reality constructed in various ways as 'Globalisation'. Though Globalisation has been understood in two distinct ways what it has been used to do in the discourse is suggest that there are economic opportunities and threats that require a radical change to social norms linked to the eroding notions of a Nation. In this context of rapid and Global change, education is seen as a way of responding to challenges presented by this new and digitally mediated context.

Thirdly there has been a decisive link made between the message and the messenger. The way policy is made using 'policy epidemics' and 'hyperactivism' creates an impression of continual change that supports the message that everything is changing. So, as noted earlier, there is a new reality for policy itself, understood as a reform process whereby this continuous reform is seen as an end in

itself (e.g. Ball 2008, p44; OECD 1995, p9). This links with an embedded self-referential 'futurology' within the discourse, where how it expresses itself reflects the message being expressed. This also emphasises the 'communicative texture' of the processes involved, where the language of the New Labour ideology is continually present as new policy. For this reason the analysis of policy as discourse seems particularly apt.

4.3.1.3 The Changing Nature of Policy Sociology - How the New Policy Discourse has Altered Policy Sociology

'Policy', understood as 'policy discourse', has to be seen as a process rather than a document. There is no single defining moment common to all policy processes which can be identified as the beginning or end of a policy. It can be a messy and contradictory process involving not just those who think up the policy but also those who draft it into a document, those who publicise the policy and those who implement and receive it. It involves a range of institutions including government think-tanks, departments, schools, businesses and other agencies. Policies are part of the mobilisation of discourse by symbolic as well as practical means. To understand a policy is to try and grasp a system of values and symbolic systems that legitimise and account for political decisions (Ball 2008, p13).

It is in the light of these changes and the new role of the policy discourse that commentators and critics have started to change their approaches to understanding the discourse and the policies. There are now moves to move analysis of policy from just knowing what's happening and how come to asking what can be done about it (Troyna 1994, p72). Some policy analysis attempts to become influential in policy formation itself (Gale 2005).

Policies before New Labour were analysed in terms of how they moved from initial proposition through to implementation. This led to analyses of policies being 'technocratic and managerialist in orientation and concerned mainly with implementation questions' (Lingard 1993, p36). According to Gale (2005) '*...they set out quite complex and intricate arrays and flowcharts of policy making processes*' and tended towards offering what Ball called '*... tidy generalities*' (Ball 1990, p9). The picture promoted by this research was a linear, two-dimensional representation

of how policy was produced and implemented. As Gale summarized this: *'Agreed values in one end, policy outcomes out the other'* (Gale 2005, p2).

One of the radical things that has happened to policy sociology is that this simple-looking theory of policy formation has been transformed and largely replaced. It has partly been transformed by ideas 'cannibalised' by the discourse surrounding the ideas of Post-Industrialism discussed in the next chapter. Stephen Ball was among the first to claim that until this shift there had been a 'theoretical and epistemological dry rot built into the analytical structures' (Ball 1994, p15) of policy research where policy studies in education were dominated by analyses from the fields of political science and public administration. This has changed.

Ball (1994) argues that policy texts are 'cannibalised products' that carry meanings representative of the struggle and conflict of their production. The approach asked for 'interpretations of interpretations' (Rizvi and Kemmis, 1987) or 'refraction' (Prosser 1981; Freeland 1986). While there is recognition that policy texts are themselves political acts or 'textual interventions into practice' (Ball 1994, p18), they *'enter'* rather than simply change power relations' (Ball 1994, p20, emphasis original). The approach attempted to discover 'what can be said, and thought, but also ... who can speak, when, where and with what authority' (Ball 1994, p21). It was a radical new approach, opening up new 'ways of talking about and conceptualizing policy' (Ball 1994, p109).

Bourdieu has said, *'the field of positions is ... inseparable from the field of stances ... both spaces ... must be analysed together'* (Bourdieu 1993a, p105). Approaching a policy as a discourse was a matter of trying to *'establish "discursive limitations"'* (Henry 1993, p102) on policy outcomes. Importantly, policy as discourse doesn't confine itself to the initial production of policy texts and the context of such production. Instead it examines how it mutates throughout the process of its existence, so its reception becomes a way of understanding production. In a sense a policy is thought of as a continuous process, of something that is always in a state of becoming as different parties act on it.

So policy text production is considered more fluid than the earlier, linear approach.

Educational policy text production includes the interpretation and involvement of teachers and other social actors. For example, Gale, looking at a policy for an aspect of Australian higher education identified six strategies used by social actors in the production of the policy discourse, '*...trading, bargaining, arguing, stalling, manoeuvring, and lobbying*' (Gale 1997, 2003). Gale and Densmore (2003, p36-53) '*... demonstrated that teachers are indeed policy makers in the tactics they employ and the use they make of policy to exploit opportunities and generate possibilities in contexts of practice*' (Gale 2005). Yeatman's (1998) calls teachers and other actors in the process 'policy activists'; in Sachs's (2003) terms, the latter calls them 'activist professionals'. Giddens (1994) has referred to this as a 'generative politics' and policy actors are to be understood as 'determining their own fate' (Yeatman 1998, p19).

Understanding this justifies the thesis analysing the role of teachers as activist professionals in the formation of policy discourse. It also suggests that the thesis, in engaging with the policies as discourse, becomes part of the policy discourse itself and its researcher becomes a 'policy actor' too.

4.4 CONCLUSIONS

The chapter has examined the introduction of ICT into English Secondary schools as a policy discourse introducing and maintaining the New Labour ideology of a globalised, digital knowledge economy and information society. This chapter has identified the constituents of this policy discourse and surveyed the policy sociology that sees the 1980's onwards, but the New Labour period beginning in 1997 in particular, as a period of a specific type of policy making process in which the specific ICT policy for education has been articulated. The ideological position of the discourse is one that requires a further examination however.

Importantly for the methodology of this thesis, Ball's work on policy sociology shows that simply selecting documents for analysis will not reflect 'policy' in an adequate way. Instead, policy has to be understood in terms of the actors, actions and settings in which it is created and taken up. Given the focus of this thesis – on understanding

how policy is related to the introduction of ICT in English Secondary schools – this implies that the process through which policies have influenced practice must be considered. To this end, rather than choose prominent policies (as other researchers have done), I will locate this analysis within the process of policy enactment that took place in a specific educational authority. As will be discussed further in the methodology chapter (chapter 7), this will involve independent actors with a responsibility for the enactment of ICT policy identifying the documents that they drew upon in their work over this period. As a consequence, the ‘policy’ documents that will be considered in this thesis are likely to differ from those analysed by other researchers, who have taken a more literal and less sociologically informed approach to what should count as ‘policy’.

It is also clearer, following this review, how the discussion of Oakeshott’s two metaphors of school purpose in chapter two relates to this phase of policy making. According to what has been discussed in this chapter the metaphor of the school as a market is one that seems to dominate policy formation. This then makes explicit the connection between educational purpose and policy formation and therefore relates to RQ1 and RQ2.

In the next chapter the thesis looks at the ideology that informs this discourse, and in doing so will begin to formulate ideas for deconstructing the discourse that has placed ICT into English Secondary schools. In doing so the chapter addresses RQ5 as well as contributing to RQ4.

CHAPTER 5:

CRITICS OF THE ICT POLICY DISCOURSE

DISCOURSE

5.1 INTRODUCTION

This chapter will look at how the ICT policy discourse has been discussed. In particular the chapter will try and show how an understanding of the new policy discourse can be used both to support and oppose placing ICT in English Secondary schools.

Although ICT is associated with this policy discourse, one of the questions for this thesis is whether its role can only be understood in this way. Much of the critical writing in the field of ICT in Education is concerned to dissociate ICT from the policy discourse. Because of this, a 'pro' and 'anti' debate on the role of ICT in Education is not particularly useful, since the criteria for judgement are already ideologically shaped. Rather a more nuanced approach is adopted here in order to reflect the current debates around ICT in Schools.

5.2 SUPPORTERS AND CRITICS OF THE NEW ICT POLICY DISCOURSE

5.2.1 Critics of the General Education Policy Discourse

The formulation of the ICT policy discourse has been identified in the thesis as beginning with the Thatcher Conservative Government of the 1980's (see e.g. Ball 2008) and developing with the New Labour Government of 1997 onwards (e.g. see Selwyn 2008). There have always been prominent educationalists opposing the identification of educational values with those of the economy and technology (see chapter 2). So we find in the late nineteen fifties Fromm writing *'Modern man is alienated from himself, from his fellow men, and from nature. He has been transformed into a commodity, experiences his life forces as an investment which*

must bring him the maximum profit obtainable under existing market conditions' (Fromm 1957, p67).

More recently Giroux has written critically of the discourse that *'[t]he main role of the teacher-turned-classroom manager is to legitimate through mandated subject matter and educational practices a market-based conception of the learner as simply a consumer of information'* (Giroux 2000, p92).

Kenway and Bullen write in a similar vein:

'...schools have found themselves in a problematic situation. High ideals tend to fade away as State-provided finances decline and as the State 'encourages' closer partnerships between education and industry. Educationally sound and attractively packaged curriculum materials fill the hole in the resources budget of schools and offer technologically sophisticated 'solutions' to the pedagogical problems of overworked teachers. These pressures have created a conflict of interest between schools' mandate to educate, and their moral and ethical duties to protect children from exploitation by consumer culture' (Kenway and Bullen 2001, p102).

These examples illustrate a huge critical literature opposing *"the language of efficiency, standards, competency, assessment, cost effectiveness [that] impoverishes our imagination and limits our educational and political vision"* (Beyer and Apple 1998, p7) and the new hegemonic bloc that links education with market economics, knowledge economics and globalisation.

Leys comments that the link between education and technology threatens educational values, citing Polyani in this claim:

'To allow the market mechanism to be the sole director of the fate of human beings and their natural environment, indeed, even of the amount and use of purchasing power, would result in the demolition of society... Robbed of the protective covering of cultural institutions, human beings would perish from the effects of social exposure; they would die as the victims of acute social dislocation through vice, perversion, crime and starvation. Nature would be reduced to its elements, neighbourhoods and landscapes defiled, rivers polluted, military safety jeopardized, the power to produce food and raw materials destroyed' (Karl Polyani 1957, p73, quoted in Leys 2001, p4).

There are alternatives to the ideology that underpins the policy that introduces ICT

into schools. Critical pedagogy is an example of an alternative educational vision that current discourse renders invisible. Wellington (2005) writes that education is a value-laden process and cites Paulo Freire (1996), *'...it can never be a neutral activity; nor are science and technology neutral, let alone science and technology education'*. Writers taking this critical stance to the discourse generally ask, as Giroux does in 'Rage and Hope', *'The critical question here is whose future, story, and interests do the school represent... Critical pedagogy argues that school practices need to be informed by a public philosophy that addresses how to construct ideological and institutional conditions in which the lived experience of empowerment for the vast majority of student becomes the defining feature of schooling'* (Giroux 2000). Critical theorists like Giroux challenge the hegemony of the educational discourse that is so contained within an economic imperative. If ICT is seen as an essential constituent of the discourse then it too is seen as part of the problem.

5.2.2 Critics of ICTs Role in the Educational Policy Discourse

Critics of the discourse raise questions as to whether ICTs transform or just add on to existing social structures (Gane 2005, p475). A question regarding the disuse of ICTs to oppose the discourses assumption about universal use is another suggested avenue of criticism (e.g. Anderson 2005).

Critics have noted that some aspects of the vision of learning endorsed by the educational vision ICT finds itself placed in is anti-social. Some argue that continual learning in a virtual reality is not unproblematically good because it could undermine social interactions (Thompson 1995). Other critics link ICT to the issue of the 'control society' and the way ICTs can make education part of the 'surveillance society' (e.g. Lyon 2006, Poster 1995). Hope (2005) discusses this in terms of ICTs providing capacities to both carry out surveillance and resist it.

Cuban (e.g. 2001) discusses the possibility of schools having an inbuilt resistance to ICTs, suggesting that there are cultural needs that schools answer that ICTs threaten. Resistance to ICTs is in this case seen as a clash between different educational visions of the kind discussed in chapter two.

Another way of criticising the discourse is to try and link ICT with ideas about teaching and learning that are disconnected from the discourse itself (e.g. Cranmer et al 2008, Selwyn 2007a). All these approaches are powerful ways of criticising the discourse whilst maintaining a positive view about the potential of ICTs in schools. The interesting work in the field of ICTs and education is in this more nuanced approach whereby the dissociation of ICTs from their setting in the discourse is theorised and researched.

5.2.3 Review of Literature Seeking to Dissociate ICT from its Setting in the Discourse

Many who oppose the new policy discourse seeks to dissociate ICT from its setting in the discourse. Enthusiasts for the introduction of ICT into schools tend to do so from a perspective of futurology that suggests ICT can transform education without necessarily being part of the economic hegemony. Leading proponents of techno-enthusiasm such as Heppell, Buckingham, Downes and Abbott, for example, tend to focus on the need for better understanding of the relationship between ICTs and positive educational transformation without necessarily referencing the new discourse. Often, such arguments are used by enthusiasts for ICTs in education without endorsing the deterministic logic of the wider policy discourse.

So, for example, writers who are enthusiastic about the potential of ICTs but not for their current use in schools point to ways in which ICTs can be understood as positive educational resources without attachment to the current educational discourse. This has led to divergent research into potentially different ways of understanding ICTs in education. So for example there are ongoing projects researching how young people use ICTs at home and at school (e.g. Sefton-Green 1998; Downes 1999; Kerawalla and Crook 2002; Somekh et al 2002; Facer et al 2003; Holloway and Valentine 2003; Selwyn N. 2002) in order to suggest ways in which education should transform itself. Studies of socio-economic reasons for inequalities of ICT use (e.g. Rudd 2002), of the impact of gender on ICT use (e.g. Harris 1999; Volman and van Eck 2001; Rudd 2002; Colley et al 1994) of how techno-popular culture could be introduced into education (e.g. Green and Bigum 1993; Marsh and Millard 2003) of the impact of age (e.g. Colley and Comber. 2003), discussions about the digital divide (e.g. Facer 2002) and of the effect of perceptions

about ICT on education (e.g. Somekh et al 2002) tend to position themselves as part of a critical discourse arguing against the current educational discourse whilst remaining positive towards the potential of transforming education using ICTs.

5.2.4 Different ways ICTs are Understood as Transformational Whilst Remaining Outside of New Labour Educational Discourse

ICTs are repositioned in this literature so that they become means of positive transformation outside of the terms of the dominant discourse. For example, links are made between ICT and constructivist models of learning linked to work by Vygotsky and Dewey (e.g. Dillenbourg, Baker, Blaye, O'Malley 1996) without apparent reference to economic concerns. However this takes place within a managerialist setting that is part of the economic discourse where achieving efficiency is the prime value.

ICTs have been argued to lead to a flattening of social hierarchies (Nunes 2006) and the generating of 'connectivity' leading to a new relationship between learner and teacher based on enquiry, networks of mutual support systems, informality and meaning-making rather than information receiving (Siemens 2004). From this perspective, learning through ICT becomes about better connectivity (Siemens 2004), personalisation (Green et al, 2006), self-determination (Beck and Beck-Gernsheim 2002) and what Selwyn calls 'rather more "messy" social relations and structures' (Selwyn 2009b, p5).

A further powerful approach to dislocating ICT from its role in the educational policy discourse has been to rethink what is meant by ICT. ICT in the policy discourse is linked with a notion of 'technological determinism'. The core idea is that technology determines certain preconceived outcomes. ICTs are produced within the educational policy document as the technology that will produce knowledge and communication as required by a global knowledge economy. ICT is defined in terms of what it is determined to accomplish. Therefore a powerful critical approach is to reconceptualise ICTs as being anti-essentialist – a position that will be explored further in the section that follows.

5.2.5 Attempts to Reconceptualise ICT in an Anti-Essentialist way to Dissociate it from the Policy Discourse

McLoughlin and Dawson (2003) argue that technology needs reconceptualising because theoretical models of organisations have failed to deal with the role of technology. In particular they criticise attempts to position technology as something that has effects on organisations via some sort of 'technological determinism'. This is of direct relevance here: the educational policy discourse articulates a transformation of schools (and education generally) and therefore it can be argued that the education policy discourse constructs ICT in just such a deterministic way. However, in developing such a critique, care needs to be taken. For example, some early critics of 'technological determinism' (e.g. Braverman's 'labour process theory', 1974) simply ended up replacing this with economic determinism (see also Post-Fordist criticism of Bell's 'Information Society' Kumar 1995, updated 2005).

Opposing technological determinism was an emphasis on the social choices in organisations and work design over above technological requirements. Pettigrew emphasised politics of decision-making (Pettigrew 1973) roughly grouped as Organisational politics/process or power process analysis of technological change (Badham 1993; Thomas 1994). This new politics and process perspective required contingent factors such as the contextual referents for decision makers to be considered, rather than assuming that technology alone could determine what would happen in an organisation.

From this perspective, technology is repositioned as a process with indeterminate outcomes (e.g. Wilkinson 1983). This answer raises new issues. If technology was a process without a determined outcome then how could one know what was and what wasn't technology? Some attempts at defining technology in terms of apparatus, equipment, hardware and software lead to 'soft determinism', with technology enabling and constraining choices in an organisation. Zuboff (1998) addressed this through a distinction between 'automating' and 'informating'. Automating *replaces* human intervention; informing makes human activity more *visible*. Choice is a social issue rather than a technological issue and so informing allows for human intervention and generates the possibility of unpredictable outcomes.

Grint and Woolgar (1997) argue that this is again a form of technological determinism. They claim Zuboff assumes a choice between what to do with technologies but does not challenge the informing capacities of the technology itself. 'The impression given is that there can be no dispute over the potential capacity of the technology, just whether or not this [actual] potential has been realised' (Grint and Woolgar 1997, p124). This gives a strong impression that it is the characteristics and capabilities of the technology that are transformative. *'This is to treat such technology as though it is a separate and parallel system to the social and organisational'* (Grint and Woolgar 1997, p25).

Grint and Woolgar argue that ICT has to be re-understood outside the construction of technological determinism completely. Instead they propose a view based on 'technology as a social construct'.

'Technologies ... are not transparent; their character is not given; and they do not contain an essence independent of the nexus of social actions of which they are a part. They do not 'by themselves' tell us what they are or what they are capable of. Instead, capabilities – what, for example, a machine will do – are attributed to the machine by humans' (Grint and Woolgar 1997, p10).

From this perspective there is no distinction at all between human and machine beyond whatever has been socially constructed. 'Technology' becomes a text within a socially constructed discourse. Interpretation of a technology and what it can do is a matter of agreeing meanings rather than discovering anything determined in the technology itself.

Building from this they argue that there is a need to consider 'Interpretive flexibility', where a wide range of explanations as to what technology can do are presented and where closure of interpretation comes only when a social group of users decide that their interpretation is fixed (Pinch and Bijker 1987, p28). Only then is the meaning of any technology stabilised. This feature may not ever be reached, so in many cases, the meaning of technologies is understood best as something continually in a process of being closed and stabilised. Technology is understood as a text continually being rewritten (Grint and Woolgar 1997). 'Technology' from this perspective is no more than 'congealed social relations' (Latour 1999).

Steve Woolgar (e.g. Woolgar et al 2002) offers a useful critique of ICT policy discourse, based on a challenge to the way that ICT is constructed in it. In particular the idea he critiques is that technology will create 'radical transformations in the structures of information and data flow' (Woolgar 2002, p2). He asks '*Are fundamental shifts taking place in how people behave, organise themselves, and interact as a result of the new technologies?*' (Woolgar 2002, p2). He further explores this in relation to interpersonal relationships, communications, social control, participation, inclusion, exclusion, social cohesion, trust and identity. These are all claims of the educational ICT policy discourse derived from versions of the construct of a 'knowledge economy'.

Woolgar doubts whether the construct of a virtual society makes sense as a whole and so doubts the claim that we are in transition to it (e.g. Gibson 1984; Stephenson 1993). He sees problems with the notion of 'Cyberspace' (e.g. Pierre Levy 1997, 1998, 1999). He sees problems with any idea of an inevitable technological future (e.g. Hine 2000; Wakeford 2000). He doubts the idea of 'homesteading on the electronic frontier' (Rheingold, 2000). He negatively critiques the ideas of ICT bringing about unbounded sociability (e.g. Castells 2001, p119). His research provides evidence of mixed results for these utopian ventures (Watson 1997; Jones 1998; Kolko and Reid 1998; Du Val Smith 1999; Ward 2000). He thinks the discourse of the virtual society involves confused ideas about what a 'community' is and entails (Smith and Kollock 1999).

Woolgar argues that the Virtual society is but one of many 'epithetised phenomena' (Woolgar 2000a), which are merely 'descriptions used to conjure a future consequent upon the effects of electronic technologies' (Woolgar 2002, p3). References to remote learning, e-learning, digital banking, global village, teleworking and so on all suggest deep and profound change. He argues that it is generally now recognised that initial research on the social impact of electronic technologies was polarised between the negative and the uncritically positive (Kitchin 1998; Gauntlett 2000), but suggests that we are now beyond the hype and can perceive some shift of attitude (e.g. Shields 2000, p11... '*The 1990's appear to have seen societies in retreat from the liminoid qualities first celebrated in visions of cyberspace and virtual society*'). However he agrees with Castells who discerns that

questions about the role of technologies on society are still *'couched in simplistic, ideological dichotomies that make an understanding of the new patterns of social interaction difficult'* (Castells 2001, p117).

One response to this may be to have more informed empirical research and some think the technologies themselves make this possible (e.g. Castells 2001). But Woolgar still perceives too much faith in the claims of technologies so that critical thinking about the role of ICT still ends up with top down, synoptic depictions of the effects of technologies

In response to this Woolgar asks whether we are constrained by the components that make up research into the effects of technologies. He identifies four key components that do this. The first is the sweeping grandiloquence of rationales that are looking for a totalising depiction (Woolgar 2002, p6). If we are witnessing growth of ICT then who is the 'we' and what technologies are we meaning and for whom does it matter? The formulations assume, presume and promise a uniformity of opinion and effect. Woolgar questions this and asks whether fundamental shifts are really happening. To answer he says that there must be clearer questions as to which people we are talking about and what differences to which behaviours in particular these universalising claims refer.

He then asks us to question assumptions that the experience of the new technologies is related unproblematically to general overarching macro-level trends. Another way of saying this is to say that looking at macro-trends doesn't offer clues as to how the technologies are being used on the ground! *'We have reached the point in the evolution of the field where we need to disaggregate the phenomenon, to focus much more on bottom-up experiences, on the nitty-gritty of actually making the damn modern work. We need to ask critically whether, to what extent, and how such everyday experiences relate, for example, to shifting patterns in employment to the development of wider social networks, and to global society'* (Woolgar 2002, p7).

Then he challenges the confidence put into claims about the effects of technology. He argues that this confidence stems from specific constituencies such as supply-side electronic industries, advertisers, media and so on and avoids other areas

where the confidence would be less secure and seem less obvious. Clumping aggregation, top-down synoptic causation and definitive outcomes are the three things, which make up the phenomenon to be understood. The persistence of confidence even in the face of apparently obvious setbacks he thinks is in part explained by the interrelationships between these three features working as a mutual self-supporting system.

This aspect of the policy discourse, what he calls 'the discourse of the definite' (Woolgar 2002, p7), pervades rationales for current analysis of technology. Woolgar argues that the confidence comes from universalising claims that makes sense only in discrete contexts. He argues that the universalisation must end and be replaced by identifying the constituencies and networks within which the discourse takes hold and flourishes (Woolgar 2002, p8).

Finally, Woolgar criticises the tendency to adopt terms of debate such as 'virtual vs. real'. This is Woolgar recognising the way the policy discourse, and the ICT discourse that it includes, reifies and determines the very terms of discussion. Instead, Woolgar wants to interrogate the terms of the debate without disengaging from them. (Woolgar 2002, p9) The terms of debate are constructions of the dominant discourse and so as such are not natural and 'given' but are deeply motivated, for example relations, meanings, implied connections, performed communities of associations. Woolgar is approaching ICT educational policy in terms of challenging some of the core meanings of the dominant educational policy discourse. He suggests a strategy of modifying and hedging the claims being made from within the discourse as a strategy to analyse (e.g. Latour and Woolgar 1986, p75-88). He denies that there is a single objective and audience to a research proposal (so 'hedging' is part of a way of appealing to a more cautious, academic audience).

He questions the possibility and desirability of separating technology from impact. His motivation is not to imply technological essentialism but rather intends that... *'This very separation should instead be brought into scrutiny as part and parcel – perhaps even as the crucial central focus – of the phenomenon to be explained'* (Woolgar 2002). As a result a construct such as 'Virtual Society' becomes 'Virtual

Society?’ where the crucial use of a punctuation mark is used to bring different audiences into coexistence.

Woolgar also notes the difficulty of synthesising research findings across a broad area of social-scientific areas and topics. Woolgar would have us not separate technology from setting because he understands setting to be constitutive of technology. The uptake and use of the new technologies depends crucially on local social context. Importantly, he suggests that this requires a rehabilitation of the concept of ‘non-use’. For Woolgar, what is happening regarding ICT is also to do with what’s *not* happening. He argues that the fears and risks associated with new technologies via the discourse are unevenly distributed within these narratives of future shock stories and emperor’s new clothes stories. He argues that virtual technologies supplement rather than substitute for real activities. For example, he suggests that the so-called paperless office is not actually paperless; instead, there is a new relationship with technology, and it is this that his Virtual Society captures. Woolgar is claiming that the more virtual a thing becomes the more real it becomes too. He gives as an example the fact that tele-workers travel more once they tele-work (Woolgar 1998).

These are, he believes, counter-intuitive findings but it is instructive to ask, counter-intuitive to whom? One answer to this, in this context, is: counter-intuitive to those who have adopted the positions advocated through the hegemonic assumptions about ICTs in the policy discourse.

Woolgar’s project is thus to get under the skin of synoptic visions of technological impact. He requires critics to look at the implications rather than impact of ICT policy. In so doing he hopes to dissociate ICTs from the policy discourse, and create a space for developing ICTs in education that are not locked in to the hegemonic vision.

Of course there are those who disagree that ICTs can be treated anti-essentialistically. A classic challenge involves trying to explain what happens when someone is shot. Is it the gun that is to blame, or the person using the gun? Kling for example argued that technology has some transformative powers beyond social

construction (Kling 1991). This is a discourse that constructs an essentialist approach where 'technical capacity is viewed as inherent to the technology (artefact or system)' (Grint and Woolgar 1995, p50). This discourse tends to assume that these capabilities have either been derived from scientific method or 'from the linear extrapolation and/or development of previous technologies' (Grint and Woolgar 1995, p50).

Woolgar and Grint argued against this. They denied the technology had the power to kill and maim because 'killing' and 'maiming' are social constructs. But it is possible to question the way Woolgar separates an effect of technology from the technology. It might be argued that its effects are an essential part of the technology, which is what in fact the dominant essentialist technology discourse assumes. This compromise between essentialism and a purely 'technology as text' position can be illustrated by the work of Russell and Williams (2004), who ask how we are to understand this negotiability of technology. What role does the materiality of technology have? Do artefacts have affects over and above socially constructed properties? How can social interactions and communications be mediated by technology? This compromise will be considered next.

5.2.5.1 The Role of Organisation in Understanding ICT: An Alternative to Grint and Woolgar

Technology seems to become purely a matter of language (or of thinking) rather than materiality in Grint and Woolgar's construction. For some, the materiality of technology matters. The Grint and Woolgar approach of 'technology as language' has been adapted by adding a concern for the dynamic interpretive interplay surrounding design, development and use of technology within and between organisations using a metaphor of technology *crystallising* in particular contingent circumstances (Fleck 1993). Also, Grint and Woolgar's approach has been further challenged by drawing a distinction between production and consumption (Grint and Woolgar 1995, p31).

So, in this critique, the social shaping of technology occurs both outside and inside adopting organisations (e.g. Dawson 2000, p51-56). It also involves consumption both in and out of an organisation. So political processes of choice and negotiation

are shared by a broader network of socio-economic relationships and structures. The disagreement with Woolgar's position isn't fundamental but it points to the fact that there are actual effects of technology.

The idea that technology is constantly open to new interpretation is challenged. McLoughlin and Dawson (2003) contend that though there is no final place of interpretation of technology there are periods when meaning is stabilised across a number of stakeholders and users which can then constrain and/or enable the use of technologies. They may also unlock previously stabilised technologies and seem sympathetic with loosening the direct effects of the materiality of technology (McLoughlin and Dawson 2003, p33).

This continuing critique of technological discourse has opened up questions as to the relationship of technological change and organisational action. If technologies are not always as open to interpretation as Grint and Woolgar *et al* claim then the possibility of dissociating ICT from the policy discourse may be more difficult than proponents of this idea think.

Actually, Grint and Woolgar's idea of treating ICTs as texts is modified by their examination of the relationship between ICT and its users. This approach argues that technology isn't totally open to interpretation. The role of actors shows that ICTs don't *have* to work in a certain way and have necessary effects. Decisions by actors are not always predictable (see Grint and Woolgar 1997, chapter 5, p116-139).

This introduces the idea of the role of technology users. Actor-focused studies of technology and organisations place a central focus on the role of technology users in assessing the impact and understanding of technology (e.g. Pettigrew 1973; Boddy and Buchanan 1986; Wilkinson 1983; Weiss and Birnbaum 1989). These approach changes in organisations as being linked to strategic choice perspectives on organisations rather than the result of technological determinism (Child 1972).

There are different approaches to theorising the effect of different actors on technology. Both 'Social action' approaches within sociology of organisations, (e.g. Goldthorpe *et al* 1968) and 'Labour process' approaches (e.g. Berman 1974;

Noble 1979, 1984) explain how technologies were constructed for certain political purposes. These draw attention to the socio-economic context, legitimacy, organisational actors' interests shaping technological change (e.g. Daft 1978). From such a perspective, technological change is constructed as an outcome of political negotiation and practices (e.g. Kantor 1988; Barley 1990; Clausen et al 2000) such as 'Collective co-operation' (Burgelman and Sayles 1986; Day 1994; Laurila 1998) or 'Managerial succession' (Child and Smith 1987; Langley and Truax 1994; Boeker 1997; Zucker and Darby 1998). This work positions people as central to the adoption and implementation of technological change (Preece 1995).

Co-evolutionary and structurational approaches emphasise an ever-enduring interplay between technologies and organisations over time. Technological change is theorised as being produced and influenced by organisational communities formed around technological innovation (e.g. Tushman and Anderson 1986; Anderson and Tushman 1990; Rosenkopf and Tushman 1994). A cyclical nature of change is thus identified. Technology and organisations change in a form of successive cycles. Change is both a matter of intention and serendipity.

Actors at different levels of an organisation make change possible (e.g. Burgelman 1996; Lovas and Ghoshal 2000). Technological change and organisational action are constructed as being inherently inseparable (e.g. Barley 1986; DeSanctis and Poole 1994; McLoughlin and Dawson 2003; Orlikowski 1992, 2000).

In these approaches 'Technology' becomes understood as a behavioural product construed in use and influenced by the interests and characteristic of users. This contrasts with essentialist readings of technology as well as with the anti-essentialist, post modernist idea of technology as metaphor or text (Grint and Woolgar 1997) by making more of the interplay between constructivist understandings of technology and its materiality. However, it assumes as does Woolgar that technological change is unpredictable. Adoptions by actors cannot always control change in predictable ways and there is nothing deterministic in the implementation of technology. This is important in the context of trying to deny claims that technology is predictable. The dominant discourse puts ICTs as central to its vision because it makes claims about what it necessarily will bring about. These theorists denying the predictability of

technological outcome, use and development are thus important in undermining these central claims in the discourse.

The advantage claimed for an 'actor focused approach' over Woolgar's more post-modern 'technology as text approach' is that it can foreground actor impact whilst preserving the facticity and materiality of technology (e.g. Floyd and Lane 2000). It is able '*... to provide analytical means which enable us to make sense of the materiality of technology as a 'hard place' and the interpretative flexibility of technology as a social construct*' (McLoughlin and Dawson 2003).

This is an approach I adopt in my discourse analysis. Documents submitted for analysis are those generated by relevant actors and reflects choices being made by actors as to how and which policies they consider constitute the overall policy.

5.3 CONCLUSIONS

The chapter has sought to show that the policy discourse placing ICTs into schools understands the technology in a certain way. Technology is understood as bringing about the new social reality of Globalisation and knowledge economies. Much of the literature surveyed in this chapter questions this assumption. Technology and its effects become a matter of social interpretations and actions and these are not as predictable and deterministic as the dominant discourse suggests. Woolgar has been taken as an important theorist because he takes a position very clearly opposing the idea that technology has essential characteristics. His idea that technology should be understood as texts, open to and dependent on different readings, is an important stance opposing the assumption of a single correct interpretation that is embedded in the dominant discourse. Other theorists have been briefly reviewed to show that there is a sophisticated body of work that undermines a central feature of the claims being made about the role of ICTs in the dominant educational discourse. They all are plausible reasons for explaining why the introduction of ICTs into English Secondary schools has not had the impact predicted by the discourse. This critical literature gives plausibility to the claim that technology is unpredictable.

However, the central point of all this discussion is that there are several powerful approaches to dissociating ICT from the main ideas of the dominant educational policy discourse. So long as ICTs are understood in the terms defined within the current policy discourse many of the problems for education will remain. The discourse has hegemonic status and does not appear to be weakening. The power of discourse is to fix some meanings and exclude others. The approach taken by critics in this chapter attempts to reintroduce excluded meanings about technology.

Much of the literature that welcomes ICTs transformational power tends to be critical or agnostic about the ICT policy discourse in which it is embedded and many enthusiasts for ICTs tend to argue for ICTs in schools despite the dominant policy agenda rather than because of it. This has led to a rather confusing picture whereby an almost defining symbol of the new discourse, ICT, is being used as both a symbol of much that the discourse embodies as well as much it opposes.

Critical positions frame education and ICT as being open to continual debate as to what they can and should be. They challenge essentialist, fixed views of this relationship and propose opening up new conceptual spaces within which a different educational discourse might be proposed. One thing that all the critics suggest is that there is a problem to be solved: they are proposing ways of developing understandings of ICT different to that of the dominant policy agenda. Much of this critical understanding has attempted to retain enthusiasm for the transformational benefits of ICT in education by problematising the way ICT has been understood in the discourse. This literature has argued that ICTs can't be used in any one predictable way. As the thesis noted when examining the policy sociology of Ball in the previous chapter, discourse is a social practice primarily using language and images to produce and maintain a set of ideas and understandings. In so doing it attempts to remove alternatives. It requires the predictability the critics deny.

In the next chapter the thesis builds on the issues these critical positions raise. However, it moves away from the internal logic of the discourse to ask a question about the origins of the discourse itself. It will explore key ideas such as the 'knowledge economy', the 'information society' and 'globalisation', which all frame the way ICT policy in schools is supposed to be understood. Woolgar et al have

exposed the interpretive texture of technology that denies the idea that anyone can predict how ICTs have to be used and what outcomes will follow from their use and development. What the next chapter does is to question whether the idea of being able to cluster the ideas of the ideology is as necessary and possible as the discourse makes it seem.

The next chapter looks at the way the introduction of ICT into schools has roots in certain ideas about modernity, in particular the theories around Post-Industrialism. It will show that theories of Post-Industrialism have been very influential but have also involved misunderstanding the nature of technology and the nature of educational processes. In enquiring into the origins of this misunderstanding the chapter will show that one theory of Post-Industrialism avoided the mistake. The theory was dismissed and its important insight missed by its critics. Its potential value will be re-assessed here.

CHAPTER 6:

THE USE OF BELL'S NOTION OF 'AXIAL PRINCIPLES' TO EXAMINE EDUCATIONAL ICT POLICYMAKING

6.1 INTRODUCTION

As argued in chapters three and four, the current discourse about ICT in English Secondary schools is shaped by ideas of a knowledge economy and information society in the context of globalisation. A hegemonic assumption of the ICT educational discourse is that ICT itself is its defining technology and therefore the policy to prioritise the introduction of ICT into English Secondary schools has been especially focused in this area of the curriculum. Although there has been since the New Labour Government came to power in 1997 enormous funding directed towards establishing ICTs as a transformative presence in the schools there is no overwhelming evidence to show that the establishment of this presence in schools has been transformative.

The question of why ICTs have not been transformative in the ways that the enthusiasts suggest has led to speculation about the nature of ICTs themselves (e.g. Woolgar and Grint 1995) and the nature of schools (e.g. Tyack and Cuban 1995). Many researchers have tried to work out reasons for the apparent non-transformational impact of ICTs on schools (e.g. Selwyn and Facer 2007; Cuban 2001; Selwyn 2008). Yet obvious enthusiasts for ICTs, such as Heppell, remain positive about ICTs' potential to transform even though they recognise that the potential is still largely unfilled beyond small-scale projects.

In this chapter the thesis proposes looking at the original versions of the powerful discourse that has placed ICT as the defining technology of a global knowledge

economic vision. The thesis proposes that many of the defining features of the vision which were developed first by Mrs Thatcher's Conservative Government of the 1980s and further developed by the New Labour Government of 1997 onwards were taken from ideas about the changing nature of modern society being discussed in the late 1960s. It was proposed that a radical shift was occurring in the developed world's economic and social systems, one where societies were progressing from a state of Industrialism to one of Post-Industrialism. The thesis suggests that the Thatcher and Blair/Brown Governments in the United Kingdom developed policies based on this idea.

One of the early theorists of Post-Industrialism was the American sociologist Daniel Bell. His idea was that of an 'Information Society'. Bell figures largely as a key figure in the development of the sociological construct of the 'Post-Industrial Society'. Alan Touraine (1971, 1974) first used the name 'Post Industrial Society' in 1971 but even the most formidable negative critics of Bell's theorising of the construct agree that Bell produced a powerful if ultimately flawed account of what this might be (Kumar 1995).

In the light of these criticisms, it is important to be clear that Bell is not being used because his theory of an Information Society is considered good sociology. The thesis has already noted that there is a large consensus within the sociological community that Bell's construct of 'The Information Society' *'...is of little use to social scientists, and still less to the wider public's understanding of the transformations in the world today'* (Webster 2002; Castells 1996, 1997, 1998, see also 2000, p10 who writes: 'we should abandon the notion of 'information society'). The thesis merely notes an aspect of his work that makes a study of Bell's work compelling. This is an aspect of Bell's theory that has been either overlooked or summarily dismissed: that the axial principles are separate realms. As will be argued in this chapter, this offers a new and potentially fertile ground for considering the place of ICTs in this discourse.

It is therefore important to note that the reference to Bell in this thesis should not be taken to suggest that it is about Bell's construct in any broader sense. It certainly

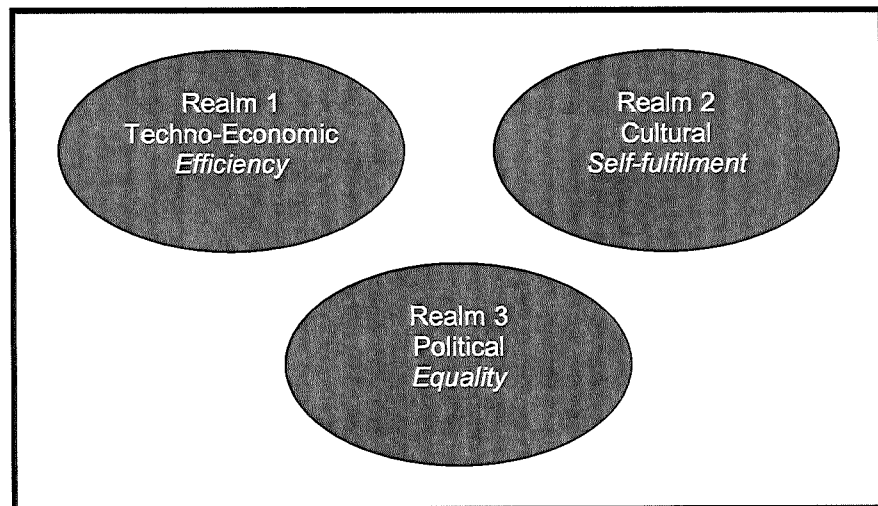
does not require close alignment with the enthusiasts for Bell's theory (e.g. McHale 1976; Martin 1978; Evans 1979; Toffler 1980; Gates 1995; Negroponte 1995; Dertouzos 1997; Angell 1995), all of whom also disregard the single aspect of Bell's sociological construct that the thesis foregrounds and which the next section of the chapter will briefly outline.

6.2 BELL'S AXIAL PRINCIPLES

6.2.1 Overview of Bell's Axial Principle

The single idea taken from Bell is simple but hugely contested. Bell uses the notion of an *axial principle* to argue that there are different realms, each with a different governing logic. For Bell there are three different realms: the techno-economic, the cultural and the political. Figure 1 illustrates the independent realms.

Figure 6.1: Bell's Axial Principles



The axial principle that applies to the Economic realm is 'Efficiency and productivity'. The axial principle applying to the Cultural realm is 'Self-fulfilment'. The axial principle applying to the Political realm is 'Equality'. Bell's idea is that each of these realms works according to these different principles. It is therefore a mistake to assume that a development in terms of one principle will automatically transfer into a realm where that principle does not apply. Simply put, an increase in productivity and

efficiency will have an effect in the techno-economic realm but will not transfer directly into the cultural or political.

6.2.2 Category Mistakes Made Clear by Bell

According to Bell, to assume culture and economics are regulated by the same values and develop in the same way involves making a category mistake. The axial principles enable different kinds of change to be identified for each realm. Crucially, technological change has to be understood in a different way from cultural change. The idea that one machine makes another obsolete makes sense and describes the way technology makes processes more efficient. The motor car replaces the horse drawn cart because it is more efficient. The idea that one cultural idea makes another obsolete is not the way cultural change happens; many cultural ideas come back, whereas old technologies do not. Samuel Beckett didn't replace Shakespeare but instead enriches meanings in Shakespeare and Beckett is himself enriched by Shakespeare. The linear change of technology is therefore contrasted to this *ricorso*, deepening, circular movement of cultural change (Bell 1980).

In his essay 'Veblen and the Technocrats' Bell writes about the utopian prophet Theodore Veblen and his attempt to forge a view of society that elevated the engineer to the role of the Philosophers in Plato's Republic (Bell 1980, p69-90). What is interesting is Bell's comment that Veblen's Utopianism was based upon an unrestricted belief in technology to bring about the rationalistic society. Bell calls this the 'rationalist fallacy' (Bell 1980, p87) and comments:

'No matter how increasingly technical the underlying social processes become - and in the advanced industrial countries, with the rapid growth of computer technology and the consequent effect on the labour force, the process is rapid indeed - social change, at bottom, is a political decision; or rather, the crucial turning points in society are ultimately determined not by cursive social changes, but only as these changes come to a head in some political form' (Bell 1980, p87).

Veblen is an instructive figure, in that in his Utopianism Bell presents us with a theory that emphasises production rather than consumption; shows contempt for non-productive elements in society such as merchants, soldiers, priests, bureaucrats and lawyers; and showed contempt for the academic learning of his time, which drew him into a final ironic situation identified by Adorno (Bell 1980, p89). 'Every happiness

barred him because of the pressures of dreamless adjustment and adaptation to reality, to the conditions of the industrial world, showed him its image in some early age of mankind'. In this the technocrat longs for the restoration of some ancient world, a kind of 'reversion' as Adorno has it to a world where the producer and her technology can, unfettered by parasitic groups of non-technocratic producers, bring about Eden.

For Bell, Veblen is therefore developing a picture of what may well be an early version (he died in the 1920's, a disappointed, outsider figure) of what drives the current policy discourse. Bell writes of Frederick W Taylor:

'... indisputably the shaper of 'modern' capitalism in establishing the principles and methodology of the rationalisation of work in terms of 'efficiency' the ideas of Veblen and his technocratic dream seems to be one that schools are familiar with when arguments for the introduction of the digital technology are being proposed' (Bell 1980, p90).

My argument has been that principles for supporting the introduction of ICT in schools are cast in terms of greater rationality and efficiency, principles that in terms of techno-economics are dominant but in the cultural and political realms are not applicable. Bell suggests that to talk like that is to ignore these other realms and is in fact to substitute them for the economic realm.

Bell resists reducing explanations of change to a techno-economic base:

'There is in human nature a capacity for creativity and surprise - to reorder things when he has the will. The fundamental question is not one of the machine - or, as E. M. Forster once asked, of what will happen when the machine stops - but of will, and the possibilities of rational cooperation. Those remain the recurrent questions of all political and social life' (Bell 1980, p65).

Bell asserts that to ignore other realms in trying to understand and manage any social system would be to make the mistake of ignoring crucial factors of other realms governed by different logics.

The cultural and the political realms are not accidents of a parasitical class, as Veblen and the technocrats believed, but are rather necessary and vital features of

any social landscape that must not be ignored. This is developed in a later essay where he writes:

'... technology is largely thought to be about progress and innovation, so that our modern situation is far more advanced technologically than any other period of human history' (Bell 1980, p4).

The temptation is to think that in other realms we are similarly advanced, but Bell warns against this. Bell writes of this as being a matter of 'the confusion of realms' (Bell 1980, p4).

The first such realm is that of nature and our power to transform it. The contemporary world is much better at this than ever before. He cites Marx as endorsing this and giving this view a philosophical justification. Hook, cited by Bell, writes that 'Human history may be viewed as a process in which new needs are created as a result of material changes instituted to fulfil the old'. According to Marx, *'...the changes in the character and quality of human needs, including the means of gratifying them, is the keystone not merely to historical change but to the changes of human nature'* (Hook 1962, p277). Marx contends that technology changes not just the world of nature but also us. The humans who were the Ancient Greeks were different from us, because technology, according to this view, alters what people need and want.

Marx advances the view that the Greeks and all other Ancient civilisations, indeed, all civilisations, were technologically primitive compared to contemporary civilisation. Marx writes:

'Is the view of nature and social relations which shaped Greek imagination and Greek {art} possible in the age of automatic machinery, and railways and locomotives, and electric telegraphs? Where does Vulcan come in as against Roberts and Co.; Jupiter as against the lightening rod; and Hermes as against the Credit Mobilier? All mythology masters and dominates and shapes the forces of nature in and through imagination; hence it disappears as soon as man gains mastery over the forces of nature...' (Marx quoted from a fragment in 1857 by Bell 1980, p5).

According to Bell, Marx viewed mankind as *homo faber*, the tool-making animal. Marx adopted Hegel's view of history divided *'...into epochs or ages, each a structurally related whole and each defined by a unique spirit qualitatively different from each*

other' (Bell 1980, p6). Mankind is marching through each of these stages rather like a child moving through the stages of some National Curriculum grading system. This *marche gerenerale* of human history is progress, determined by history itself, which ends, finally, in the final stage where '*anthropology...replaces theology*' (Bell 1980, p6). This teleological theory of human progress states that mankind has a purpose, which is to reveal the true nature of humanity to itself. If that reality is *homo faber* then the end of history, of time itself, is the apotheosis of the technological civilisation. Marx's argument is influential in subsequent theories about technology and modernity.

However, Bell points out the simple flaw in the argument, which is that from the perspective of the axial principles, human nature cannot be assimilated into *homo faber*. It is too limiting a definition of what humans are. If mankind is partly characterised by *homo faber* she is equally characterised as *homo pictor*. This is the '*symbolism producing*' animal. Bell's insight is that though the world of *homo faber* may be linear, with a straight line of progression from simple tools to more complicated ones, the world of *homo pictor* is not at all like that. The '*depictions of the world are not outmoded in linear history but persist and coexist in all their variety and multiplicity through past and present, outside of "progressive" time*' (Bell 1980, p6).

Bell suggests that to understand what marks us off from earlier cultures is to work out how culture and technology interact in a way that enables realms to remain distinct and different from each other. Bell argues that to attempt to reduce one into the other is to miss the explanatory power of having the two realms. More is understood if both are allowed to remain. He argues that the Marxian/Hegelian view, which absorbs everything into the technological progressive linear history, falsifies the situation by oversimplifying it.

Bell opposes nature to culture in an interesting way, as his version of nature is linked to the notion of technology. There are two components to this: the first is captured by the German word *Umwelt* that he defines as '*the organic and inorganic realms of the earth, which are changed by man*' (Bell 1980, p8). Geography and the environment are captured by this term. The second is captured by what the Greeks called *physis*

which he defines as '*the order of things which is discerned by man*' (Bell 1980, p8). Using these terms Bell claims that what man tries to do is to bring these natures into history by both transforming nature and by seeking out the order of things.

His narrative about this aspect of mankind's striving both to shape nature and to interpret its meaning runs from the Ancient Greeks to the present day. Consequently, it is highly speculative in one sense and schematic in another. Yet it is a clear story. He jumps from Protagoras and his mythological, metaphorical and personification of the world of nature to the modern method which he locates with Galileo, who simplified nature by dividing the world up into the world of qualities and the world of quantities and with Descartes who he sees as wanting to do more than just achieve greater exactitude and measurement but also wanted to 'raise the general intellectual powers of men' (Bell 1980, p11).

From this comes what Koestler called the 'watershed' where the meaning of the universal order disappears. 'Give me extension and motion, and I will construct the Universe' was Descartes' claim, but with it any sense that there was a direction, a meaning and a purpose, a *telos*, was eradicated. This is the mechanisation of the world, where mathematical principles explain everything and nature is conceptualised as a machine.

So alongside the mythological and the methodological comes the idea of man the inventor, the experimenter, the purposeful intervener in the processes of nature. This, crudely put, is the idea of man as an active re-shaper of the world. Nature is something we do things to. Bell traces this idea firstly to a Christian *contemptus mundi*, 'a rejection of the earth as the dwelling place of man and an indifference to nature' (Bell 1980, p13). Out of this developed the idea of man as a controller of nature and an active agent. One important aspect of the Renaissance can be understood in these terms, as a flourishing of this attempt to master nature. Brunelleschi's Florence Cathedral, Ghiberti's bronze works, da Vinci's maps, canals, flying machines, weapons, Cellini's gold craftsmanship, sculptors, guns, Cellini the adventurer, Durer's cartography and surveyor-ship are all cited.

A second source of this Bell roots in Descartes' revolution of concepts. Descartes and then Kant began thinking about thinking as a way of organising rather than as merely copying. The idea of the mind as something active, as a formulator of plans reworking the categories of nature meant that the idea of reworking, reformulating, changing and rerouting nature became operational. Francis Bacon and Karl Marx are described by Bell as being 'prophets' of this view. For Marx, technology is the way that mankind will be released from slavery to nature and become freed from bondage. *'The "end of history" is the substitution of a conscious social order for a natural order. The unfettered reign of technology is the foundation of abundance, the condition for the reduction, if not the end, of necessity'* (Bell 1980, p19).

Bell analyses technology in terms of five elements: Function, Energy, Fabrication, Communication and Control and Algorithms. Function emphasises the lack of dialogue with the past in technology. Modernism is its continual state. Energy emphasises the limitless power of technology. Fabrication emphasises the reproductive power of technologies, which has reached a scale that takes it beyond old style printing press/craftsmanship. Communication and Control emphasises the way technology has exponentially expanded what speeds and distances can be reached. Algorithms emphasises the way technology can be used to substitute for human judgement.

Bell acknowledges that technology has transformed the world. He quotes Mervyn Jones: *'A man born in 1800 and dying in 1860 would have seen the coming of the railway, the steamship, the telegraph, gas lighting, factory-made clothing and furniture. A man born in 1860 and dying in 1920 would have seen the telephone, electric light, the car and the lorry, the aeroplane, radio and the cinema...'* (Jones 1972) in order to show how technology has impacted on lives. Technological change is now faster than ever before and a defining part of modernity.

Bell doesn't deny that there are deep effects of technology. Some effects work on the axis of economics and others work on interaction between people causing greater density of interactions. In terms of economic changes, technology has brought about increasing wealth. Standards of living have clearly been changed by technology. In

terms of the density, Bell considers technology has brought about 'mass society'. Mass society is not just about size but is about the nature of the relationships between people in such a society. In brief people become defined by their roles, as smaller and smaller parts of an increasing whole. Efficiency, specialisation, competition and the narrowing focus of tasks and skills define the social structure.

Yet Bell notes how many commentators discuss the problems of mass society and modernism in terms of apocalypse but what Bell wants to resist is the kind of thinking that talks about technology as having a 'logic' of its own, as if we are now all living in the grip of a vast and untameable technological momentum that traps us all and cannot be stopped. This logic of technology is famously encapsulated by Marx's famous line in *The Poverty of Philosophy* (Marx 1847, chapter 2): '*The hand-mill gives you society with the feudal lord; the steam mill society with the industrial capitalist*'.

Bell argues that this is not the correct way of looking at the situation. He distinguishes between technologies on the one hand and the social 'support system' in which it's embedded, between the technology and the accounting system that allocates cost. His emphasis is in his opposition of *society* to *nature*. If nature is 'out there', society is but '*a set of social arrangements, created by men, to regulate normatively the exchange of wants and satisfactions*' (Bell 1980, p29). Bell denies that cultural and political realms are shaped by the technological and economic. His approach is distinct from post-modernist critics who agree that the techno-economic realm can't determine how societal change happens but argue that this is because there are no essentially different realms with their own defining axial principles. It is from this perspective that it becomes possible to identify a space for education that isn't regulated by the techno-economic realm but rather by principles from other realms.

Bell is not alone in proposing such a distinction. A similar thesis has been propounded before in terms of education and technology. In his book "Back To the Rough Ground", Dunne (1993) reintroduced an Aristotelian division between two kinds of thinking. *Techne* is aligned with thinking that makes or produces (*poiesis*) things. It is practical, technical thinking that enables calculation, measurement and efficiency. It involves means-end (*ta pros to telos*) thinking, whereby ends can be

specified in advance and reached by following a prearranged, planned method (Aristotle: Nichomachean Ethics Book 6). *Poeiesis* was the activity of producing outcomes.

In contrast to *techne*, another type of knowledge was *Phronesis*, which was a more personal, experiential, supple and less predictable and measureable knowledge, which brought about activity as *praxis*. Praxis aims at conduct in a public space with others, which attempts to realise excellences that are recognised by her community as making up a worthwhile life. Praxis was less detached, more intimately concerned and connected with how one understood oneself and ones relationship with others than poiesis. It was reason that worked in contexts that were more unplannable, subjective, non-linear than those where poiesis worked.

Dunne calls one 'technical reasoning' and the other 'practical reasoning'. He claims that the modern era's self-image has been that of a technological society. *'Technical reason seemed to be bolstered by the full energy of the Industrial Revolution – reinforced by the utilitarianism of Bentham and Mill as well as by the confidence in science of what was still an Age of Progress...'* (Dunne 1993, p11). Dunne argues that the predominance of *techne* has distorted our self-image and that without *Phronesis* a more personal, committed, flexible type of intelligence is ignored. It is a type of intelligence required for religion. John Henry Newman in 'A Grammar of Assent' showed that religious thinking was inexplicable and distorted if understood as a form of *techne*. Collingwood in his 'Principles Of Art' argued a similar case for understanding art. Dunne argues that a similar category mistake has been applied to education.

The point of mentioning Dunne's idea here is to draw attention to the idea that Bell's idea of separate realms of change and action, governed by different axial principles, is consistent with existing educational discussions. The discussion in chapter two about the metaphors of schools as markets opposed to schools as monasteries is another example of this. The affinities between these two examples of separate realms suggests that Bell's theory might well be useful in the context of education even if sociologists found little in its detail to recommend it more generally.

6.2.3 A Prima Facie Case Using Bell's Approach

The technology of the 'information society' is what J D Bolter called a 'defining technology.' He writes:

'A defining technology develops links, metaphorical or otherwise, with a culture's science, philosophy, or literature; it is always available to serve as a metaphor, example, model, or symbol. A defining technology resembles a magnifying glass, which collects and focuses seeming disparate ideas in a culture into one bright, sometimes piercing ray. Technology does not call forth major cultural changes by itself but it does bring ideas into a new focus by explaining or exemplifying them in new ways to larger audiences' (Bolter 1984).

This is suggestive because, taken in the light of Bell's argument, it seems to offer another way of understanding the enthusiasm of the techno-reformer whilst at the same time giving a reason for why ICT fails to deliver on its promises. Heesen (2004) develops this claim. She argues that ICT carries with it claims for 'universalism', that ICT carries with it the power to bring about universal discursive and democratic communication; in other words, it has the power to alter not merely objects of the technical realm but also those in the cultural and political realms. 'Universalism' is the claim that Bell rejects, as does Heesen.

The technology's ability to deliver a powerful information system and communication system is not controversial; the Internet is clearly a significant and important technological development in this area. However, to confuse this with its ability to '*...promote the ...achievement of universal primary education...*' (Heesen 2004, p3) is for Heesen to confuse its metaphorical power with its actual power. When cultural critics buy into the normativeness of technological culture they act as if there is '*...a close interdependency of technical developments and dominating social values, forms of experience and forms of organisation*' (Heesen 2004, p3). The educational policy agenda is certainly creating a discourse that suggests that, through the lens of computer technology, it is possible '*...to discern objective and social reality*' (Heesen 2004, p3) and Heesen suggests that it is the Universalism embedded in the technology that makes it so loaded with Utopianism.

Heesen claims 'Universalism' as '*...a historical intellectual basis of enlightenment*' (Heesen 2004, p4) and that this is something attached to computer technology in a

way that it wasn't for earlier powerful modern technologies such as air transport, cinema or the telephone. This is an arresting point as it begins to make a subtle adjustment to the earlier ideas looked at in this thesis: it suggests that not all technologies could be so 'ethically overloaded', as Heesen puts it, as ICT has been, because they didn't have the right connection to cultural values. However, this is not convincing from the perspective of discourse, which shows that earlier technologies have been used in a similar way to computers. For example, Tyack and Cuban (1995) have shown that a similar ethical overload has been attached to technology introduced into schools in the past, even the recent past. And as indicated when discussing Bell, Marxism is strongly influenced by readings of technology as having cultural and political agency, which is exactly what Bell denies.

If 'Universalism can be characterised as the "meta-narrative" of the Enlightenment', as Heesen quoting Lyotard claims it can, then we can see how computer technology has been able to create the techno-reform agenda. But for Bell it cannot be a 'principle of organisation with normative implications' (Heesen 2004, p4) as the policy discourse claims. This is because of the distinction between techno-economic and educational realms. The claim of the thesis is that education is a practice that needs to be understood as part of the cultural realm rather than only the techno-economic. Its axial principles are therefore irreducible to any other axial principles. This is a view found in the work of many educational theorists. Representatively, Lawton and Cowen (2001, p17) write that, *'For 2000 or even 3000 years educational discourse used the language of philosophy and religions and not of economics. Defining how to live wisely in the world (and not how to live well off it) has been the oldest educational question'*.

Yet contemporary educational practitioners working from within the current policy discourse are constrained in their efforts to work with this agreed discourse. A leading post-modernist critic of the discourse argues that the current discourse makes it *'...difficult to imagine a community of learning that reaches into both the past and the future and is constituted by an awareness of intergenerational obligation'* (Lasch 1995, p40). The challenge is to respond to those who feel no obligation to distinguish between educational and economic values. According to

McLaughlin (2000) current educational policy is construed as encouraging individuals to become consumers not citizens. The policy discourse has mutated education into a business model creating an educational sector that is 'obsessed by cultivating the ability to stay on top of the latest trends' (Totterdell 2000, p131), with bespoke curriculum offers and with 'personalisation', all of which accepts a need to treat individuals as customers.

The thesis reads Bell as offering a theoretical position that claims that this approach changes the subject: an education system that tries to develop according to economic and technological axial principles is one that is no longer education. This echoes the discussion of Pring's work in chapter two. What the use of Bell does is to propose that there may well be something about the very nature of *culture*, and therefore that aspect of education that is cultural, that means that it will *always* offer a clash of values to those of *technology* and *economics*.

Bell offers a theoretical tool useful to analyse the ICT in education discourse, identify the category errors that it contains and in doing so offer an explanation of why it has so far seemed incapable of addressing issues that raise values not addressable in a techno-economic framework. For example, the key issue of the 'digital divide' involves values such as equality, self-expression and Bourdieu's (1993b, 1997) notion of 'human and social capital' (e.g. DiMaggio and Hargittai 2002; Grant 2007; Wellman 1999) that seem intractable in the dominant discourse; arguably, this is because it would be the axial principles of the political and cultural realms that best incorporate these values.

In the next section, further information about the origins and meaning of these realms and their principles will be provided.

6.3 ORIGINS OF THE AXIAL PRINCIPLES

6.3.1 Post-Industrialism

The theory of the division of realms and their axial principles was developed out of Bell's construct of an 'Information Society' (Bell 1974b), which was Bell's theoretical

construct of Post-Industrialism. This construct involved several features that have been considered requirements of the current policy discourse even though this model has largely been discredited within sociology (e.g. Kumar 2005; Grant 2007). These features include an optimistic Enlightenment belief in progress that predicted the dominance of professional and technical employment (especially scientists and engineers), of an increased need for education and training, leading to an emergence of better educated workforce (general up skilling of society), in the growth of the service sector and white collar jobs replacing declining blue collar heavy industrialism, in computers being the defining technology of social arrangement, of information/knowledge becoming the new chief commodity, of the centrality of theoretical knowledge for innovation, and of work becoming conceived as a game against/between people rather than against nature/fabricated nature (Naisbitt 1984; Coyle 1997; Stonier 1983; Drucker 1969; Toffler 1970).

Bell made clear that all this could be explained by reference to a techno-economic logic of change, identified by Bell as an axial principle of efficiency that only functioned in the 'realm' of the techno-economic which could not therefore exhaust social reality unless this realm was the whole of social reality. Bell's account conceives of two other realms, the political and the cultural, alongside the techno-economic realm, defined in terms of different axial principles of change. Most of those enthusiastic towards his view of the Information Society ignored this, assuming that it affected not just the techno-economic realm but also the political and the cultural realms as well. It is this element that my thesis takes up.

6.4 BELL'S CRITICS

There is a huge literature that shows how many aspects of Bell's theory of an 'Information Society' has either been displaced or disproved (e.g. Kumar 1995; Webster 2002; Mackay 2001). Kumar, a powerful representative of the criticism of Bell's position, provides an authoritative overview of Bell's approach to Post-Industrialism and how it has in turn been rendered largely obsolete (Kumar 1995). In this section of the chapter I shall review the literature that critiques Bell's idea of the 'Information Society' and contrasts it with its chief rivals, Post-Fordism and Post-

Modernism.

When specifically addressing the single idea that the thesis is taking from Bell, the separation of society into three realms, Kumar writes; *"If the coming of the information society is, as all claim, as revolutionary a change as the coming of industrial society, then one would surely expect profound changes to occur throughout all society, and not simply – as Bell would have it – in the 'techno-economic structure'"* (Kumar 1995, p13). The thesis argues that Bell's approach offers a constraint to the claims of the techno-enthusiasts if we reject this expectation. Bell's theory of Post-Industrialism conceived the influence of technology to be purely in the realm of the economic. Cultural and political change would be ordered by different axial principles.

Interestingly, this is an aspect of Bell's theory that even enthusiasts found improbable (Kumar 1995). For example, Toffler, an ardent enthusiast for Bell's Information Society, writes about 'the rise of a new civilisation' (Toffler 1980, p5) and another enthusiast, Naisbitt (Naisbitt 1984, p211-29 also p281-2), looked forward to a complete restructuring of institutions based on the computer (Kumar 2005, p15). Yet others write about the notion of an Information Age as being a 'consensus society' (e.g. Stonier 1983; Meyrowitz 1986, p321-3; Sussman 1989, p62-3), a plentiful society (Stonier 1983, p213; King 1982, p27) a 'Computopia' (Masuda 1985, p625-32), and Angell wrote about how it was *'... a new order ... the future is being born in the so-called Information Superhighways...[and] anyone bypassed by these highways faces ruin'* (Angell 1995, p10). All of these readings of Bell assumed that the whole of society would be altered rather than just the techno-economic realm. As a result the analytic potential of this construct has been ignored.

For Kumar the second version of Post-Industrialism was Post-Fordism. What Kumar calls Post-Fordist critics powerfully dismantled much of Bell's version of Post-Industrialism. There were many reasons why Bell's theory was seen as inadequate. For example, Webster (1995, 2002) is typical of many critics, arguing that the idea of an 'Information Society' was inadequate as a tool for understanding and explaining the world because it was too imprecise about the terms it used and that it confused

quantitative change with qualitative change.

In particular: the criteria for determining exactly what an 'Information Society' was remained unclear and inconsistent. It was also unclear how 'information' was being used in this context. A critic, Stevens, wrote that: *'so diverse are the definitions of information today... that it is impossible to reconcile them... there is little consistency in the way in which the term information is used... resulting in an assumption, probably incorrect, that there is a broad underlying definition of information that encompasses all uses of the term in all fields that is commonly and widely understood'* (Stevens 1986, p5). Zhang Yuexiao reported 400 conceptions of the term 'information' in research literature over various fields, emphasising the issue (1988, p400).

What critics thought was being claimed was that *more* information (whatever that was) led to *qualitative* social change without explaining how this happened (e.g. Giddens 1985, p178; Postman 1985; Washburn and Thornton 1996). It was vague about other key terms, such as 'theoretical knowledge' (Kumar 1978, p219-30; Stehr 1994; Webster 2000; Giddens 1992, 1994, 1981, p262) and 'technology'. Post-Fordists tended to assume a deterministic approach to technology of the sort critiqued by Grint and Woolgar discussed earlier.

Post-Fordists were reluctant to admit that there was anything significantly different in the modern social organisation despite the quantitative increase in information and knowledge used. They assumed that there was no division of realms and that this was a fact of social reality that was obvious.

Kumar's third version of Post-Industrialism, which he calls the Postmodernist approach to Post-Industrialism, is understood as making the same assumption. This perspective denies that there is a single cause or dominant perspective explaining social reality, but also rejects the inflexibility and determinism of Post-Fordist arguments about a 'control society' (e.g. Beniger 1986; Webster and Robins 1986). Nonetheless it assumes all realms and perspectives can in principle be used to explain Post-Industrial discourse. Therefore it too claims that there are no

impermeable realms governed by different axial principles and change logics.

Notions of Post-Industrialism developed against Bell's construct of the Information Society, as noted above. What follows is a brief summary of the alternative notions of Post-Industrialism that developed in reaction to Bell's Information Society. A Post-Fordist, Post-Industrialist construct arose during the 1970s oil crisis. These critics thought Bell's theory far too optimistic, arising at a time of abundance and perceived economic success and technological innovation. In place of Bell's optimism it offered a pessimistic Enlightenment view. It argued that more information doesn't create a new society (e.g. Webster 2000) and that Bell was being ahistorical (e.g. Hirsch 1977; Stretton 1976) and that the new technology merely continued trends that had begun a long time before – so that the Information Society was merely a phase of capitalism (Webster 2000).

For the Post-Fordists the idea of Post-Industrialism was just a new version of a 'control society', a development of the scientific management ideas of Taylorism, developing a discourse of managerialism (e.g. Gewirtz and Ball 2000). All that was happening was that mass production techniques were being refined/developed (e.g. Beniger 1985; Rosenbrock et al 1985) in the new context of Globalisation and new ICTs (e.g. Webster 1986, 1989, 2001). These developments involved more bespoke and flexible modes of production and distribution including small-batch production, economies of scale and specialisation of jobs and products to increase responsiveness. ICTs were understood as being central to this and new types of consumer were replacing ideas of social class. But the Post-Fordists did not think any of this was positive or progressive.

Through the rise of white-collar workers and the feminisation of the workforce (Ball 2008), Post-Fordists emphasise the role of ICTs to control. For example de Benedetti writes: *'Information technology is basically a technology of coordination and control of the labour force, the white collar worker, which Taylorian organisation doesn't cover'* (de Benedetti 1979). They claim that what resulted was deskilled clerical work rather than a general up-skilling (Cooley 1981; Boden 1980; Forester 1987; Rosenbrock et al 1985) that led to further professional deskilling (e.g. Baran

1988, p697). The fact that the new economy required a deskilled workforce for many of its service jobs was taken as a decisive contradiction of Bell's optimism and also the view that more and better-educated workers were needed.

The Post-Modernist construct of Post-Industrialism was critical of the Post-Fordists. It was neither optimistic nor pessimistic about the Enlightenment agenda of progress because it sought to replace that agenda with a Post-Enlightenment one. It was critical of the Post-Fordist reluctance to engage with alternative perspectives to its own and its failure to engage with perceptions of contemporary people who do find ICTs as positive and doing more than delivering oppressive social control mechanisms. The Post-Modern perspective refuses to think that there is just one single dominant perspective and understands the viewpoint of Enlightenment progress to be one view among many other competing views.

However, it does tend to see ICT as a defining technology of this Post-Industrial age, radically configuring notions of space and time of mass production via virtual realities and a discontinuity with the past. It also sees information displacing land, labour and capital as the key value (e.g. Stonier 1983, p8). However, by focusing on the 'communicative texture' of the Post-Modern world it focuses on the potential of ICTs to develop this texture over discourses, messages, images, exponential growth and radical transformation of everything. It is a perspective of radical discontinuity and fragmentation: '*A profoundly atomising and disintegrative cacophony...inescapable*' (Lyotard 1984). This approach profoundly opposes the idea of the possibility of separate realms as Bell conceives them.

The Post-Modernist approach attempts to explain all social reality in terms of these discontinuities and fragmentation and therefore denies that there can be anything like realms, which are necessarily incompatible. The Post-Modernist might agree that people may chose to view them separately at a certain point in history or for a particular reason, but this would be a matter of chance, a contingent fact about a particular society, rather than what Bell argues, a universal categorisation for understanding any social set-up. The Post-Modernist theorises no reason for separating realms and so is sceptical of any claim, such as Bell's, that maintains that

the political and the cultural and the techno-economic may not be mixed up.

It is clear that the current policy discourse placing ICT into schools has drawn on Bell's optimism but ignored the division of realms Bell built into his theory.

6.5 THE USE OF BELL IN THIS THESIS

The policy discourse used to introduce ICT into Secondary education links economic well-being with the central role of ICT within successful Post-Industrial society. The dominant competing versions of Post-Industrialism all make this claim for ICT. It is carried forward into policy discourse generally and education policy specifically. In the literature, policy is formulated in terms that were recognisable in Post-Industrial writing.

In each version of Post-Industrialism there is a general optimism about the impact of ICT. It is claimed that a new society needs new skills and that its workforce must be able to use ICT (e.g. Hepp, Hinostraza, Laval and Rehbein 2004). ICT is connected to productivity enhancement. Given that knowledge is what the new society has to produce more of, and education is a key to educational purpose, The link between ICT and educational success is a consequence of people trying to join this wonderful thing (ICT) to something that needs fixing (education). In the discourse, schools are required to revise learning practices and create better learning environments in order to produce quality education. ICT is at the core of this transformational agenda.

The discourse of ICT education policies typically conceive of four approaches to ICT in schools (e.g. Kozma 2005). ICTs improve delivery and access to education. ICTs are the focus of learning. ICTs improve student understanding, increase the quality of learning and increase the impact of education on the economy. And finally ICTs improve knowledge creation, technology, technological innovation, knowledge sharing/access and contribute to the transformation of education systems to create sustained economic growth and social development.

The discourse presents a set of key benefits of ICT to learners (e.g. Papert 1997).

They are supposed to bring about enhanced motivation and creativity due to new learning environments. They create a greater disposition to research and problem-solve focused on real situations. They help achieve a more comprehensive assimilation of knowledge in an interdisciplinary environment. They have a greater ability to generate knowledge and a greater capacity to cope with rapid change, complexity and uncertainty than anything else. They develop new skills and abilities fostered through technological literacy (e.g. Kozma and Anderson 2002; Kozma and Wagner 2005; Hepp, Hinostraza, Laval and Rehbein 2004).

This general glance at the discourse of ICT educational policy suggests a direct link to the discourses of Post Industrialism. What appears to be overlooked in both is Bell's division of realms, which offers a way of understanding constraints on the centrality of ICT in all these discourses.

When Bell writes about 'The Cultural Contradictions of Capitalism' (Bell 1973, 1976, 1974b, 1980, 1990) he grapples with the division of realms and the different axial principles governing them. His proposal is that the values of one realm may be directly opposed to those of another. So long as education is considered as part of the techno-economic realm then ICTs will also be asked to work according to the values of that realm. But if education is treated as being within the cultural realm, then ICT should be considered according to a different kind of logic - the axial principles of the cultural realm rather than those of the techno-economic.

The arguments of critics of the policy discourse tend to argue for a conceptualisation of ICT that seems to be more closely aligned with values that are cultural rather than techno-economic. If education is understood from the cultural realm then this would create a conceptual space in which ICTs can be considered in a way that need not engage directly with techno-economic concerns.

6.6 CONCLUSIONS

The chapter has investigated the recent origins of educational ICT policy discourse. The contested construct of Post-Industrialism has been considered as a root of the

discourse. One overlooked feature of these attempts to understand modernity is the tripartite theory of different realms in Daniel Bell's idea of the 'Information Society'. This aspect of his theory was rejected as socially improbable, which overlooked its potential as an analytic construct. The thesis contends, however, that the failure of the policy discourse to transform English Secondary schools could be explained through this construct and the idea of 'contradiction'. By arguing that education should be part of the cultural realm ICTs would be reconceptualised to the extent that they are to be engaged in educational transformations of any kind. By decoupling ICTs from their techno-economic realm the thesis suggests that the ICT educationalists who are working at reconceptualising ICTs can reconfigure their arguments in terms of pure educational, cultural values rather than having to link up with those of the techno-economic. The thesis of realms and axial principles therefore shifts education itself out of the policy discourse.

The thesis is using Bell's division to allow cultural and political values to be differentiated from techno-economic ones, providing an analytic framework. The thesis is not developing a theory like Bell's about Post-Industrialism; it recognises that is where the idea came from but, given that the theory as a whole has been widely rejected, this work is not intended to build on the rest of that foundation. Instead the thesis claims that this analytical distinction is useful in understanding how educational values can be understood outside of the techno-economic realm. The point is to argue that the educational values are not to be confused with other values.

This is the point of using Bell in the thesis: as a way of showing there are alternatives to thinking of students as 'consumers of educational output' (Vanderstraeten 2004, p195) and to reflect Geoffrey Hinchliffe's question (Hinchliffe 2001) about whether education should have some sort of autonomy directed toward intrinsic ends, of being valued for its own sake, as suggested by Oakeshott's metaphor of schools as monasteries. Bell offers alternative discourses to the techno-economic and so he increases the range of vocabularies and values that can be used to speak about education. Bell opposes the idea that there is a foundational discourse, a single unified principle at the base of understanding society. Bell's axial principles will thus

be deemed to be a useful framework if they are able to offer a more convincing account of the contradictions around the implementation of the current policy than is possible by assuming there is merely a single realm, that of the techno-economic. The proposal is that this framework should link more satisfactorily with ways of talking about education and schooling (and in the particular scope of this particular thesis, English Secondary schools and education) than assuming a single discourse. Therefore the justification for using Bell is purely in terms of the analytic value of the three realms. If, for example, the discussion about educational purpose understood in terms of a contrast between market and monastery (see chapter 2) is better understood using Bell than not, then the use of the framework for analysis will be considered to be justified.

By taking the axial principles as ways of looking at the techno-reformist agenda there is the potential to analyse why, despite the explicit and continuing confidence of the techno-reformists to change teaching and learning in schools, there has not been the overwhelming success predicted. What the framework proposes is that there may well be something about the very nature of *culture*, and therefore education, that means that it will always clash with the values of *technology* and *economics*.

Bell's work therefore provides a theoretical tool that may be useful to 'crack open' the discourse, identify the extent to which claims may be misattributed in order to provide an explanation of why policy has so far seemed incapable of addressing issues that raise values not addressable in a techno-economic framework. This application of Bell's theory of axial principles to the educational policy discourse introducing ICT into Secondary schools has not been attempted before.

This criticism does not deny, of course, that the construct of an 'Information Society' has largely been rendered obsolete as sociology. Nonetheless it has been important to review these ideas here. As discussed in relation to the formation of policy in this area, whether credible as sociology or not, these ideas have undoubtedly been influential in determining the policy discourse for the introduction of ICT into Secondary schools, and so are important for the analysis that is to follow.

The next chapter outlines the methodology for approaching a discourse analysis of some documents associated with the policy discourse currently being used by teachers in a selection of English Secondary schools.

CHAPTER 7:

CASE STUDY METHODOLOGY

7.1 INTRODUCTION

The thesis has so far involved looking at literature related to the introduction of ICT into English Secondary schools. In order to examine the introduction of ICT, Ball's concept of 'policy discourse' policy sociology proved helpful (see chapter 3). This reframed policy as a process that was enacted, which requires consideration of the people involved in this process.

The thesis also looked at the recent history of some of the predominant terms used in the discourse and located them in various readings of 'Post Industrialism'. Although as a sociological idea 'Post-Industrialism' and many of its constituent terms, such as 'Information Society', 'Knowledge Economy' and 'Globalisation', are considered suspect for being too imprecise and ambiguous (e.g. by sociologists such as Webster 2001), they are nevertheless used as key terms in the policy affecting the change agenda. They will therefore feature in this thesis, albeit primarily as data rather than as an analytic frame.

The thesis then raised a question about the relationship between ICT and this discourse. ICT has been positioned as a symbolic technology, capable of representing all of the positive futuristic elements of the discourse. ICT has been seen as a central cause of the transformations of modern society and something unavoidable, powerful and in many ways defining of what the new modernity is (see chapters 3 and 4). Education has been rethought as a response to this vision of the world and ICT in schools has been a key area of reform resulting in massive investment and a massive presence in schools. However, there is little evidence of the transformational impact that was promised (see chapter 2), suggesting that the claims made through policy must be examined more closely.

The discourse analysis that will be undertaken in the thesis forms part of this investigation. An analysis will be undertaken to explore how different sets of justifications – different axial principles, to use Bell's terminology (see chapter 6) – are used in policy, and specifically, what the relative role is of techno-economic, cultural and political considerations. This exploration of policy will therefore reflect Bell's assumption that there are alternative axial principles separate from those of the techno-economic realm.

The analysis will cover a fifteen-year period: covering the entirety of the New Labour administration.

This chapter explores how this analysis should be carried out, within the context of Ball's model of policy sociology. It looks at the general principles of Critical Discourse Analysis (CDA), briefly outlines different approaches within this tradition, and considers critiques of CDA. The chapter then shows how CDA will be related to Bell's concept of the Axial categories.

7.2 THE RESEARCH PROBLEM BEING INVESTIGATED

ICTs are an essential part of the current policy discourse in English Secondary schools developed by the New Labour Government since it came to power in 1997 (see chapter 2). The research problem being investigated in this part of the thesis asks whether the techno-economic discourse established in chapter three also applies to the policy process.

ICT in schools is prominent in the educational policy reform discourse (Ball 2008) and is associated with all of the claims made for the discourse, from globalisation to the knowledge economy. The introduction of ICT in schools is strongly associated with these reforms and it is hard to dissociate it from the discourse though perhaps it is not exclusive to it. It is for this reason that the thesis introduced an idea found in Daniel Bell's sociology of Post-Industrialism. Bell resists the dominant idea that if there are changes in the techno-economic sphere, such as the development of a knowledge economy/information society and globalisation, that these are changes

that will affect all aspects of society. In the previous chapter the thesis examined Bell's use of the different axial principles governing three separate realms of society, the techno-economic, the cultural and the political, and his idea that change within each realm takes place according to different principles.

The thesis is concerned with education and the place of ICTs in education. The reform discourse presents ICTs as educationally transforming agents, replacing previous notions of education rather than enabling better understanding of educational values.

The discourse analysis is therefore asking how policies position ICT within English Secondary schools. Having done this the thesis will apply the CDA to Bell's theory of axial principles. This application is new to the thesis, and represents a modest methodological contribution. It is in order to highlight the possible roles of cultural and political principles that Bell has been introduced. This will allow claims to be made about whether the techno-economic realm, governed by the principle of efficiency, dominates the educational discourse at the expense of cultural and political principles.

7.3 RESEARCH APPROACH

The literature reviewed in previous chapters has partially answered Research Question 1 '*What happens when ICT is introduced to Education?*' and has focused on the case of English Secondary schools. ICT has been introduced within an evolving policy discourse that has been broader in influence than just education. A general policy discourse has been implemented which has introduced ICT as its key technology and this has been placed into educational policy. Research Question 2 then asked, '*How does policy influence this process? In particular what have the policies been? How were they formed? How are they expected to influence practice?*' Some of these questions have been partially addressed in chapters three and four. In order to fully answer these, more evidence is needed about the content of these policies in terms of the discourse, in particular what the discourse includes and what it excludes.

A striking feature of the policy process outlined in chapter three has been the assumption of an unproblematic transference from a general policy reform discourse of key ideas and concepts driving a techno-economic vision to an education setting. RQ3 is an attempt to raise the possibility that there might be a problem in the assumption of transference. It was for this reason Bell's theory of axial principles has been introduced, which is a theory that suggests such transference is not only problematic but maybe a category mistake.

The design process for the next piece of research requires a series of progressive steps to collect and code data relevant to answering RQ3, which asks, '*What concepts can be used to explain the influence of the policies, are they educational concepts and if not how does this make a difference?*' Work on RQ1 and RQ2 has generated a better understanding of the relationship between policy and its various discourses. A key feature taken from Ball (2008) concerned the way a discourse is both produced and maintained. Rather than having just a single text as the policy, policy is now understood as a process of text and actors in continual discursive relationship. It is much more an iterative and reflexive process than a linear one. For this reason it was important that the selection of text was something that involved actors within the policy discourse process, and this has influenced the sampling process used in this thesis, as will be described further below.

However, once the documents have been selected, the thesis will have to analyse the ways in which these make claims about ICT in order to explain how they act as a part of the policy process. Such analysis can be undertaken using Critical Discourse Analysis (CDA), which will be introduced in the next section.

7.4 CRITICAL DISCOURSE ANALYSIS

There is no single stabilised methodology denoted by the term Critical Discourse Analysis (CDA). However, there are some common features within the traditions of work that use this label. CDA attempts to analyse the way texts and language relate to power structures within the social space in which they are brought into being and maintained. According to key CDA writers, discourse is 'a form of social practice'

(Fairclough and Wodak 1997, p258). Discourse takes a deconstructionist stance towards texts, analysing them in order to reveal hidden connections and disconnections between its various constituents, such as the words it uses, its layout, the ordering and emphasis of points, rhetorical and genre pointers and so on in order to tease out the rich layers of meanings and the theoretical and ideological structures that govern writing and reading.

Language in its context is central to CDA (Wodak 2001). CDA attempts to place understandings of how texts are constructed and meanings maintained within a social, historical and genealogical context. In order to do this it draws upon a diverse field of academic disciplines: linguistics, philosophy, sociology, history and hermeneutical approaches from English Literature and the Arts.

The production and maintenance of power relations are of particular interest to CDA theorists such as Fairclough (1992, 1993, 1995, 1996, 1998a, 1998b, 2000, 2001, 2003), Van Dijk (1993, 1996a, 1996b, 1997, 1998a, 1998b, 1999, 2001), Gee (1999, 2005), Van Leeuwen (1993, 1995, 1996), Wodak (1996, 2000, 2001) and Scollon (2001). Interestingly, CDA theorists tend to present their own versions of CDA in order to nuance their particular focus of analysis. This goes some way to explaining why there is a divergence of CDA methodologies within CDA itself. Fairclough and Wodak (1997) offer eight principles that they argue constitute CDA. However, they cannot be considered defining, as the practice of CDA draws attention to the way in which such attempts to maintain a fixed position would be ironic in the light of CDA's critical, deconstructing agenda.

The eight principles are useful however in capturing the flavour and atmosphere of CDA. The first of the eight principles that CDA focuses on are social problems. It looks to the language used within a certain social practice to understand how and how far the problems are connected with this language. This relationship is assumed to be a hidden one, either on purpose or otherwise, and requires teasing out by examining power relationships hidden in the texts used (Fairclough and Wodak, 1997). So in the case of this thesis, educational ICT policy in English Secondary schools is being approached as a problem that needs analysis. Research Question 3 involves asking whether the concepts being used in the ICT policy discourse are

educational. Analysing texts may reveal how the discourse creates and maintains this problem.

Their second principle is that CDA assumes that power relations are discursive. Power is fixed and re-fixed through negotiations within a discourse. Power is a key element in CDA, and for this reason, much CDA is influenced by the work of Foucault.

Their third principle is that any particular discourse constitutes society and culture. According to this idea, to know a discourse is to know a society. Language is therefore assumed to have huge power by CDA, which explains why textual analysis and linguistics have been influential. For CDA every nuance of language is terrifically important because of its relationship to the whole of a social organisation. For example, subtle analysis of language can reveal the hidden biases towards particular race and gender groups in a society. Feminist, anti-racist and anti-colonialist theory is particularly adept at teasing out these biases.

Discourses are also taken to be ideologically productive. Definitions of ideology are as diffuse and difficult to pin-down as definitions of CDA but ideology in the context of this discussion (Fairclough and Wodak, 1997) is about the interconnected set of dominant ideas that structure belief in a social context. For example the literature reviewed in chapter three suggests that the general policy discourse is a vehicle for an ideology dominated by ideas of globalisation, ICT and the knowledge economy.

CDA also requires that the historical context of a discourse be understood so that the forces from this context are also factors in how the production and reception of the text is contextualised within this historical moment, as well as the ideological and cultural elements that feed into and constitute understanding the discourse (Fairclough and Wodak 1997; Wodak 1996, 2001). Chapter two and chapter three have given details of the historical context of the discourse to be understood in this thesis. This consideration has influenced the structure of the analysis carried out in this thesis, as will be explained below.

A further principle of CDA is that of 'mediation'. This term is about how a text and

society relate through a process whereby the text affects beliefs in the society, which in turn effects readings of the text. CDA does not assume that texts determine how a society understands itself but rather the mediation is one of meanings and interpretations running back and forth, where production and reception is a discursive process of reflexivity. The dynamic nature of this mediation gives CDA an open texture (Fairclough 1992, 1995; Scollon 1998, 1999, 2001). In order to capture this some CDA theorists have introduced the idea that there are different 'orders of discourse' (Fairclough 1992, 1995). Wodak (1996), like van Dijk (1997, 2001), tries to capture the mediated nature of social realities analysed through the process.

A further key principal is that CDA is hermeneutical in a rich sense. Hermeneutics offers an interpretation that also explains the social problem it has fixed on. It involves openness to new interpretations and readings. It accepts as part of its own process that different readers and writers of texts will bring understandings that will destabilise any single attempt to fix an interpretation and explanation. CDA is particularly sensitive to how parts of a text relate to its whole, and how a single word, for example, may contain as much importance as larger elements. Meyer (2001) contrasts this approach with any 'analytic- inductive' approach, maintaining that this better grasps the complexity of a text's language.

Basic concepts have emerged for CDA. This is the analysis of the relationship between macro vs. micro in the language of a discourse. This is the awareness that a micro use of language can also be part of a macro level use. For example, an expression of a personal opinion by an MP may be understood as a micro level use of language but may also be part of a macro level policy enactment. So in a preface to a government document, opinions about globalisation may be read as enacting both a personal and a policy position (Government ministers expressing both their own opinions and enacting policy in this way introduce many of the documents analysed in the discourse analysis in this thesis). CDA might analyse this through engaging with the different groups the person expressing the opinions may be identified with. So she can be identified as a member of various different groups. So her opinion might be one expressing the opinions of mothers, daughters, single parents, MPs, cabinet Ministers and so on. Analysis would then engage with the structures of power and the processes of mediation between her identity as a

member of each group to understand how her expressed opinion in the text contributed to the discourse. Her contributions to actions would also be analysed as a producer, mediator and reader of the discourse. So too would the context in which the text is placed as well as the personal and social knowledge informing her opinions.

CDA finally considers itself to be scientific in its approach to discourse, seeking to reveal '*... opaqueness and power relationships. CDA is a socially committed scientific paradigm. It attempts to bring about change in communicative and socio-political practices*' (Fairclough and Wodak 1997).

7.4.1 Directions of Critical Discourse Analysis

CDA has historical roots in the neo-Marxist analysis of the Frankfurt School pre the Second World War (Agger 1992; Rasmussen 1996), which emphasised a more fluid and open-ended, post-modernist approach which opened Marxism up to different interpretations and meanings. CDA's current focus on language and interpretation may be traced to the emergence in the UK and Australia of 'critical linguistics' (Fowler et al. 1979; see also Mey 1985). van Dyke suggests that developments in psycholinguistics, sociology, psychology (Birnbaum 1971; Calhoun 1995; Fay 1987; Fox and Prilleltensky 1997; Hymes 1972; Ibanez and Iniguez 1997; Singh 1996; Thomas 1993; Turkel 1996; Wodak 1996) reacting against assumptions of 'asocial', 'acritical' approaches dominant in the sixties set the direction of CDA development.

CDA in particular is the development of a foregrounding of value-ladenness of all activities and thoughts. CDA assumes that perspectives that are not always detected and are often deliberately opaque and difficult to grasp govern every position of interpretation. CDA tends to position itself as '*a different "mode" or "perspective" of theorizing, analysis, and application throughout the whole field. We may find a more or less critical perspective in such diverse areas as pragmatics, conversation analysis, narrative analysis, rhetoric, stylistics, sociolinguistics, ethnography, or media analysis, among others*' (van Dijk 1998b, p1).

This direction has meant that CDA is particularly attractive to a range of different theoretical approaches to analysis. Its stress on hermeneutical practice has meant

that many proponents of CDA have been attracted by a post-modernist analytical framework which spurns any master-narrative but instead proposes a multi-layered and multi-vocal approach whereby texts mediate within themselves, between their different audiences and between the different groups and sub groups making up the dynamic process of interpretive, explanatory practice within any field analysed.

Power and control are also, as noted above, key concepts for CDA, which will typically attempt to uncover the sources of power and control in a text. Gramsci's notion of 'hegemony' is a key element of much CDA (Burke, 1999, 2005). Hegemony is the term used to identify the various ways that dominant groups ensure that their power is maintained through laws, norms, habits, rules and general consensus. In this thesis the general reform discourse's hegemonic ideas about the modern world as being globalised, as being a knowledge economy, as being an Information society and of ICT's role as a defining, symbolic technology is being studied. The CDA of the texts carried out in the next chapter is to uncover the operation of control and power in the texts and problematise them.

A CDA may ask how powerful groups maintain their power over a public discourse like education. Symbolic force is one way where texts reproduce hegemonic views of a certain perspective (van Dijk 1996a). Power over the production of such texts and power to restrict production of alternative views requires that analysis examines how this happens. Social, economic and political structures are all part of the process of regulating discourse and are therefore possible foci of a CDA. Both context (Duranti and Goodwin 1992) and the structure of texts involved in hegemonic discourse production and maintenance are part of CDA. Genre can fix content and perceived purpose and meaning of a text (Wodak 1984, 1986) and CDA is sensitive to both included and excluded voices (Irvine 1974). Similarly, the choice of what topics are included and excluded from texts is important. For example who controls the choice of topics is important (Gans 1979). Just as men have been shown to control topic choice and topic change in conversations with women (Palmer 1989; Fishman 1983; Leet-Pellegrini 1980; Lindegren-Lerman 1983) social elites and power groups can control topics as a means of maintaining their favoured discourse.

CDA therefore looks at the way elites control discourse. The focus of CDA is on how

the groups control and maintain the created discourse. If there is widespread use and acceptance of particular discourses (e.g. as in some of the documents here, that China is about to take over the world's economy and take all the knowledge jobs) then a text may present an argument in a way that exploits these beliefs (in this case, the need for education to compete with this). If people believe that computers are necessarily empowering then a text may present ICT education in a way that exploits that belief (c.f. Wodak and van Dijk 2000).

7.4.1.1 van Dijk's Socio-Cognitive Model

CDA has also engaged with the role of media. van Dijk has been a key figure in this development. He argues that:

'Discourse is not simply an isolated textual or dialogic structure. Rather it is a complex communicative event that also embodies a social context, featuring participants (and their properties) as well as production and reception processes' (van Dijk 1988, p2).

van Dijk has enabled CDA to move beyond just the internal stories embedded within the texts themselves and incorporate analysis of the practises and institutions of the production of texts themselves. This is particularly relevant given Ball's model of policy sociology that underlies the work in this thesis. This analysis involves an adversarial CDA which embodies an 'Us vs. Them' approach. Between a discourse and society lies a mediating model of beliefs of individuals of groups. These models are the combined and intertwined beliefs and attitudes of the groups that the individuals are members of. These are understood, according to van Dijk's theory, as contrasting and opposing outsider group models. Polarised groups are therefore key to his CDA approach. Enthusiasts for the educational ICT policy discourse, therefore, would be analysed in terms of their opposition to groups who were not enthusiasts.

van Dijk analyses the historical, political and cultural context of the discourses in which conflicts arise, the different groups involved, especially the power relationships between them. This leads to the production of Us vs. Them opinions, drawing out both implicit and presupposed opinions and examining the formal structures of texts such as choice of words and rhetorical devices in order to help emphasise polarised group opinions. van Dijk's focus on the political and cultural as contexts for understanding the discourses overlaps with similar interests found in my thesis.

However, because he uses the focus to develop power relationships between groups involved in the discourse there is a difference in motivation. The reading of Bell offered in my thesis doesn't present the political and cultural as a context for the discourse but rather as separate realms of ways of speaking. Reading Bell in this way, they are separate realms of discourse.

7.4.1.2 Wodak: Discourse Sociolinguistics

Another direction taken by CDA has been the discourse sociolinguistics of Wodak, influenced by Habermas. Wodak writes:

'Discourse Sociolinguistics...is a sociolinguistics which not only is explicitly dedicated to the study of the text in context, but also accords both factors equal importance. It is an approach capable of identifying and describing the underlying mechanisms that contribute to those disorders in discourse which are embedded in a particular context-whether they be in the structure and function of the media, or in institutions such as a hospital or a school-and inevitably affect communication' (Wodak 1996, p3).

For Wodak there are three important elements to language that must be analysed in CDA. Wodak thinks that language always involves power and ideologies and so any analysis of a text must examine the attitudes and values embedded in the power relationships exhibited in a text. She also thinks that language must be studied in its historical context so that events of the present and events during its formulation in the past are examined. Finally, Wodak thinks that any CDA must be systematically sensitive to the interpretivist stance of readers and listeners of texts. She draws a conclusion from this hermeneutical approach, that *'the right interpretation does not exist; a hermeneutic approach is necessary. Interpretations can be more or less plausible or adequate, but they cannot be true'* (Wodak and Ludwig 1999, p13).

Asking whether the discourses being examined in this thesis alter over time, a concern reflected in the way that the analysis was undertaken and reported, was something that arose from Wodak's work.

7.4.1.3 Fairclough

Fairclough approaches CDA from what he calls a Critical Language Study perspective (Fairclough 1985, p5). This approach intends to be *'...a contribution to the general raising of consciousness of exploitative social relations, through focusing*

upon language' (Fairclough 1989, p4). The approach Fairclough takes is to try and bring social science and Systemic Functional Linguistics (SFL) together under a common theoretical framework.

Interestingly, the approach of Fairclough has been one that has accepted much of what this thesis has questioned. Fairclough writes that:

'...the past two decades or so have been a period of profound economic social transformation on a global scale' (Chuliaraki and Fairclough 1999, p30).

The CDA of this thesis intends to analyse how this assumption has been made to be taken for granted. Chuliaraki and Fairclough (1999) think that the changes *'are to a significant degree ...transformations in the language, and discourse'* (p6). From this perspective CDA is about creating an awareness of *'what is, how it has come to be, and what it might become, on the basis of which people may be able to make and remake their lives'* (p4).

Fairclough, like van Dijk, has three elements to his framework for analysing what CDA calls a 'communicative event'. The first element is 'text', which his framework requires is analysed in terms of its ideological representations, the way it is constructed to highlight certain elements and the way it attempts to organise the relationship between the intentions of the writer and the reader.

The second element is the discourse practice, which is an analysis of how a discourse text is edited through its initial production as text and then the discourse processes that change the text through processes of distribution and consumption. The text is never, therefore, merely the words on a certain page but has to involve the multifarious and evolving ways it is produced and mutated through processes of writing and reading and discussion, argument, adaptation, reinterpretation and so on. This kind of CDA is in a sense an acceptance of a "Chinese whispers" process of textual analysis where there is no definitive point of entrance into the process nor one for exit either.

A core concept in Fairclough's approach is 'intertextuality'. Fairclough (1992, p84) defines intertextuality as, *"the property of texts being full of snatches of other texts,*

which may be explicitly demarcated or merged in, and which the text may assimilate, contradict, ironically echo, and so forth". What Fairclough's approach is about is the recognition that meanings in texts (and out of texts too) are often composed of echoes and repetitions, some of them, 'manifest intertextuality', being overt and signalled through the use of quotation marks and reference acknowledgements and others, 'constitutive intertextuality', are the discourse conventions that structure the texts. So, for example, an official document may use formal conventions and these conventions are part of what makes the document official.

The third aspect of Fairclough's approach is what he calls the Socio-cultural practice. This dimension echoes Bell's tripartite division of social realms to a large extent in that he asserts a theory of three dimensions of socio-cultural context for analysing a communicative event: the economic, the political and the cultural. Any CDA need not engage with all three levels but might examine just a single dimension to understand a 'communicative event'. This socio-cultural practise overlaps with Bell, endorsing the credibility of using Bell's logic of tripartite realms and axial principles (explained in chapter 5) as a frame for analysing the outcomes of CDA in this thesis.

7.4.1.4 Banister

Banister (Banister et al 1994) derives many of his ideas about CDA from Fairclough. However, unlike many who write about CDA, he has developed explicit steps to structure the reading of text in order to identify discourses:

'It should be said that these steps conceal the feelings of muddle and confusion that will overwhelm the researcher approaching a text for the first time. As the process of analysis goes on, this feeling of bewilderment will be succeeded by conviction that the analysis is banal... the steps in this analysis particularise and detail the conceptual and historical work of Foucault on the construction, function and variation of discourses as they pertain to the requirements of qualitative research... (Banister 1994, p96).

The methodology used in this research will follow Banister's stepped approach these steps will be outlined later in this chapter.

7.4.2 Critical Discourse Analysis, its Critics and Modest Ambitions

CDA has been subjected to continual criticism. A generally perceived problem has been whether it is justified in claiming that its analysis yields genuine knowledge.

Critics argue that the theoretical foundations underpinning the CDA approach are too flimsy because they tend to be predominantly Marxist or post-modernist. Silverman summarises many of the critics of CDA when he writes:

'Marxist theory is linked with a faulty idea of historical progress towards fulfilment of a preconceived goal that Marx inherited from Hegel. It also assumes to have insights into working class consciousness. Post-modernist theory... is problematic because of its relativism. To assume that emancipation is the goal of research conflates yet again 'fact' and 'value'. How research is used is a value-laden, political question. To my mind, the first goal of scientific research is valid knowledge. To claim otherwise is to make an alliance with an awful dynasty that includes 'Aryan science' under the Nazis, and 'socialist science' under Stalin' (Silverman 2001, p221).

Connected with this kind of argument is the ironical fact that many non-emancipatory agents, such as advertising executives and PR publicists, are trained in CDA. The theory as such is therefore not inherently emancipatory and relies on the attitudes and politics of those using it to be so.

Some Positivists claim that CDA is not scientific and that the author's intentions can be misrepresented. However, this misses the point: CDA is not intended to 'uncover' the 'true' meanings of authors, but to show ways in which the text can be read and interpreted. In light of this, the thesis does not claim that any of the findings are 'scientifically valid' in a positivist sense, but instead foregrounds Wodak's emphasis on credible interpretation, based on the subjective, interpretivist hermeneutic approach.

There is also criticism of CDA because it seems to imply that 'discourse analysis' is not critical. It is also criticised for claiming to be too ambitious:

'It aims to achieve a very great deal more than other kinds of discourse analysis. Not only does it claim to offer an understanding of discursive processes, but also of society as a whole, of what is wrong with it, and of how it can and should be changed' (Hammersley 1997, p252).

Defenders of CDA acknowledge some of Hammersley's doubts but defend it as being more modest in its scope of influence. My CDA claims a more parochial scope, limiting its study to English Secondary school education of a specific time and refusing to claim global, cross sector generalisability. It is also sensitive to the issue

of warrant that Hammersley raises. Acknowledging the problems with the three foundational philosophies associated with CDA at its inception, the thesis has developed a largely Foucauldian, stepped approach (Pennycook 2001). The Marxist, Decisionist and Universal Pragmatist approaches associated, respectively with Marx, Nietzsche/Kierkegaard and Habermas do have flaws as tools validating the claims of CDAers (Haig 2004, p7).

Foucault's approach itself is also flawed to the extent that it is relativist. Yet it readily acknowledges the interdisciplinary nature of CDA which inevitably raises issues about which specialism, with its particular perspective, is given permission to speak to its object. Interdisciplinary subjects inevitably raise issues of which discourse is privileged over others and CDA, being very sensitive to the communicative texture of its subject matter, has been defended by arguing that CDA activities are '*... situated practices ... that search for the political/discursive (subtextual), social/historical (pretextual), and local/contingent (contextual) ways in which texts and readers produce (intertextual) meanings in relation across texts,*' (Threadgold and Kamler 1997, p112).

But also CDAers have developed internal tools of a pragmatic nature to secure theoretically justifiable analysis, such as Silverman's list of criteria for evaluating research used by the British Sociological Association (Silverman 2001, p222). This defence of CDA therefore takes a more pragmatic view of CDA's attempts to reveal the ideological power structures '*...lurking between the lines on the page and within the social structures in which the interactions take place*' (Haig 2004, p9) than are sometimes ascribed to the approach. The appeal of Banister was his stepped approach which spelled out clearly the methodological tool kit being used and answering critics like Fowler who worry that often CDAers don't do this enough (Fowler 1996). My approach also answers Widdowson's accusation that often CDAers don't reveal how texts analysed were selected (Widdowson 1995a; 1995b; 1996; 1997; 1998; 2000a; 2000b; 2001a; 2001b). My methodology makes very clear the protocol according to which the documents were gathered. Finally, to the criticism by Haig that CDA analysis sometimes fails to take into account how analysed texts appear to their intended readers rather than just their own

subjectivities, I think my selection protocol and my own inclusion within the readership community of the analysed texts helps counter this criticism.

Finally, I don't think that CDAers have to insert themselves as agents of recommended change, as someone like Jim Martin recommends when he writes *'The theory has to be developed to the point where it informs interventions in the political process – where critical linguists take charge for example of public relations for the ANC or intervene directly with education ministers in curriculum debates. This involves developing appropriate theories of semiotic subversion'* (Martin 1992, p587-8). I think practical political engagement with the power structures being subjected to CDA need not be overtly part of any analysis even though as a matter of contingent autobiography I am in fact so engaged and that it may be hoped that any such analysis might lead to engagement.

7.5 RESEARCH METHODS

In the light of this background knowledge of CDA the thesis approaches the research in a particular way. Firstly, in answering RQ1 and RQ2 the thesis has established that there is a policy discourse and shown that, at least in terms of surface readings of the language used, that this is dominated by what we have labelled the techno-economic realm. The work of Ball has been prominent in identifying this. What seems to be assumed in all the literature around this discourse, both positive and negative, is that this ideology is capable of delivering educational concepts. What this thesis will focus on is asking whether this assumption (that techno-economic explanations are sufficient and credible justifications of particular educational developments) is credible. By applying Bell's axial principles to the outcomes of the CDA process, the thesis hopes to find new understandings of the policy process running through the discourse of the New Labour reform agenda.

What follows is a description of the steps constituting the CDA being used to address RQ3. There will be two separate parts to the research approach and each part will consist of a further two sub-components. Reflecting Ball's argument that policy involves agents, part 1a will be about the selection of individuals for a panel who will

put forward documents to be analysed. Part 1b will outline how the documents to be analysed will be selected for inclusion in this thesis. Part 2a will outline the stepped approach as developed by Banister, which will be used to analyse the documents. Part 2b will include two additional steps developed by the researcher, one of which will include using Bell's axial principles.

The research takes a case study approach. 'Case study' is an holistic research method adapted for analysing a specific individual case. Although there is little agreement as to what actually constitutes a case study (Merriam 1988), such studies tend to be able to bring to life a process orientated phenomenon such as the educational policy process that this thesis is investigating. The approach has some drawbacks: it rarely involves quantitative information, for example, and generalisation from the individual case is hard to achieve in a credible way. It relies heavily on interpretation and the application of theory, which is consistent with the use of CDA. However, so long as attention is paid as to why the case is being studied then careful generalisation may be possible and the results of these studies can be as valid as other kinds of qualitative analysis.

This particular case study is what Stake calls an '*instrumental*' rather than an '*intrinsic*' case study (Stake 1994). The interest in the individual case is in how it can help understand the external issue: here, how ICT is being introduced into English Secondary schools. There is no particular interest in the actual individuals and documents except in how far they help develop an understanding of the particular issues raised by the thesis. This outside interest is why the agents and documents that form this case study have been chosen. Campbell sees a case study as a small step towards a grand generalisation (Campbell 1975). In this way the thesis is making a contribution to understanding the policy process by exploring how various actors take a role in developing and implementing policy, understood to involve the choices of agents and the use of a range of written texts.

The approach commits the researcher to making choices about what to report and what to leave out. These decisions are expected to be made whilst writing the results. It is a deeply subjective process but researchers using this approach, such as Stake (1994), Campbell (1975), Hamilton (1980) and Yin (1989) for example,

suggest that this is unavoidable and does not invalidate it. In the context of this thesis, these decisions are taken in order to show what can be learned from studying what a specific group of people were reading and invoking in their work as they took part in the process of introducing ICT into Secondary schools in a particular place at a particular time, working at a local level within a national framework.

The timeframe for this study was between 1995 and 2010, covering the entirety of the Labour administration and a period of intense activity around the issues of ICT in schools. In 1995 New Labour had already started putting out their position papers although they were not yet in power. From 1997 onwards the policies putting ICT into schools begun, as discussed in chapter two. In 2010, the Labour administration ended. It is for these reasons that the time period of the case study was chosen.

People from a single local area were chosen who were all involved in this National policy process. One education authority has been selected, and the individuals concerned can all be understood as key intermediaries between policy and practice: their role was to support and guide schools in the light of government policy. They thus have a pivotal role to play in enacting the policy process.

What is intended is that the meanings discovered in this small case study of this policy process provide insight into the process more generally. The researcher has selected a small case study which seems to offer an opportunity for learning (Stake 1994, p243). The fifteen-year period being analysed led to the decision of breaking the analysis into two studies, the first one analysing the period between 1995 to 2005 and the second one analysing the period between 2006 to 2010. This decision reflects a change in tone in the policy (as will be evidenced in the analysis that follows) between a period of establishment and a period of consolidation. A comparative study contrasting the two periods was expected to help answer the question of whether (and how) the discourse changed throughout the period.

7.5.1 Data Gathering

Part 1a: Key Actors Selection

Given that research into the introduction of ICT into English Secondary schools is a central element of the thesis it would have been possible for the research to focus

solely on texts such as policy documents that were considered central to the policy agenda in other research literature. However, the research into policy sociology has suggested that a policy is not merely a text. Ball made clear that a policy was a process rather than any single text and that policy as a process was inevitably fluid, unfixed, discursive and open-ended. The decision therefore to invite key actors working within the policy discourse to introduce ICT into English Secondary schools was therefore taken to reflect this.

People are a part of the policy process. Given that the focus of this thesis is English Secondary schools it was decided that key actors working in this arena should be involved in the selection of text. The researcher therefore invited representatives working within English Secondary schools. These people were approached because they are the key actors influencing practice-using policy (Ball 2008). The researcher was able to gain access to the relevant groups based in North London.

Table 7.1 shows the reference criteria which were used to select the key actors for the nomination of documents.

Table 7.1: Reference Criteria for the Selection of Key Actors

Criteria	Description
1. Experience	Working in English Secondary Schools between 1995-2010
2. Type of School	English Secondary School
3. Location of Work	North London
4. Qualifications	Qualified Teaching Status
5. Role	Some Responsibility for ICT Across The Curriculum
6. Gender	Not relevant
7. Ethnicity	Not relevant
8. Age	Not relevant

The key actors were requested to produce a list of the documents they considered to have the most influence on practice regarding the use of ICTs of the relevant decade (1995-2010). Responses to this request produced a core group of documents.

Part 1b: Document Sample Selection

The analysis was of selected written texts. Understanding that a text is more than merely the written text, but has to include the process of production and its maintenance through various audience readings and adjustments, as noted above when discussing CDA. For this reason, each text was read drawing on knowledge of the historical context brought to the text.

The nominated documents put forward by the actors were reviewed with references to the criteria in Table 7.2.

Table 7.2: Reference Criteria for the Selection of Documents

Criteria	Description
1	Documents must focus specifically on the use of ICTs in education between the years of 1995-2010
2	Documents must focus on English Secondary Education in the UK
3	Documents must offer a distinct perspective on the current and future roles ICTs can or should play in English Secondary Schools in the UK

Out of the core list produced by the actors only those documents that met the above criteria were included in the analysis for the purposes of this thesis.

7.5.2 Data Analysis

The next stage of the research was to analyse the selected text using a version of critical discourse analysis put forward by Banister (1994). Bell's axial principles were then applied to the outcomes of the CDA. What follows in this section is a brief overview of the theory used for the document analysis.

Part 2a: Critical Discourse Analysis

Wodak's understanding that language always involves power influences the approach taken here. Analysing the texts, therefore, meant trying to tease out how power was used in the texts. Also, having researched the context out of which these particular texts had been produced, it was possible to interpret them drawing on knowledge of this historical context. Wodak's remarks about having to take a hermeneutic approach were also helpful in answering critics charging CDA with

making spurious claims of scientific objectivity: Wodak's approach settles for subjective persuasiveness (Wodak and Ludwig 1999). The rigorous procedures that will be adopted for the analysis were used as scaffolding for plausible interpretations of the texts rather than attempts to produce definitive, empirical truths.

Having asked the key actors to nominate the text and using the criteria in Table 7.2 above the analysis used steps developed by Banister (see table 7.3; Banister 1994, p96-104).

Table 7.3: CDA Steps Developed by Banister 1994

Step	Activity
A	Description of the text
B	Free associate to the text
C	Systematically itemise objects that appear in the text in order to piece together what they could signify
D	How are these objects spoken about in the text
E	Systematically itemise the subjects that appear in the text
F	Reconstruct the differential rights to speak within a discourse, what each type of person may say within the framework presupposed by the text
G	Map the different versions of the social world which co-exist in the text
H	Ask how imaginary authors of the statements of the text would respond to those who contradicted them
I	Identifying contrasts between ways of speaking
J	Identifying points where these ways of speaking overlap
K	Make some comparisons with other text to assess how these ways of speaking address different audiences
L	Choose an appropriate terminology to label the discourses
M	A study of where and when these discourses developed
N	Description of how they have operated to naturalise the things they refer to (speech marks for the objects of which they speak)
O	Examine discourses role in reproducing institutions

P	Examine ways in which discourses subvert institutions
Q	Analyse who would benefit and who would be disadvantaged by such discourses
R	Who would want to support and who would want to discredit these ways of talking
S	Link together the discourses described to show how they entail other discourses of power
T	How they reproduce or challenge dominant conceptions as to what can change and what may be possible

By going through the steps described above the analysis explored how discourses *'form the objects of which they speak'*, as Foucault puts it, rather than *'...authors who speak through the text as if it were a kind of transparent screen upon which the writer's intentions were displayed'* (Banister et al 1994, p100).

Part 2b: Additional Steps to Banisters CDA

Having completed steps A to T above the thesis moved to part 2b of the research method, which examined what this analysis looked like when applying Bells' axial principles and also considering explicitly Wodak's points about how discourses have developed over time. Table 7.4 outlines the final two steps in this analysis.

Table 7.4: Additional Steps

Step	Activity
U	What do the findings look like through the lens of Bell's axial principles?
V	How do the discourses change over time? What is their relative prevalence over time?

The final part of the analysis, where the analysis labelled the various discourses within the documents using Bell's conceptual schema, was intended to structure the reading of the text and help to answer RQ3. By using Bell's axial principles the analysis categorised the discourses found in terms in a way that added depth to Banister's approach. Specifically, this enabled the thesis to discuss in a structured manner the way the different discourses found in the text relate to each other

(including highlighting any absence of discourses of certain kinds) and suggested the limits and constraints placed on each discourse. Because principles from different realms work according to different logics of change (according to Bell's theory, as explained in chapter 5), applying these to the CDA enabled greater insight into the discourses working in the reform agenda introducing ICT to English Secondary schools.

Applying Wodak's analysis of the prevalence of discourses over time led to the decision to undertake this analysis in two stages. Having two discrete studies allowed for a comparison of how discourses changed over the relevant period. It raised the possibility that elements from the cultural and political realms may have become more or less prevalent over time.

7.5.3 University Ethics Approval

The research design was compliant with British Education Research Association (BERA) and the Institute of Education research guidelines. Each key actor was provided a consent form giving permission for the use of their input; key actors were told that their contributions would be kept anonymous. The data collected was not sensitive, private nor confidential. Key actors were also informed that they would be able to opt out of the research at any time.

7.5.4 Issues of Reliability and Validity

The analysis produced was discursive and interpretive. It traced reasons for locating the various strands of discourse in the text. The results were a reading of the documents and, as discussed above, all that will be claimed was plausibility rather than truth. Much of the work in the chapters leading up to the analysis was used to give a context for the reading in order to substantiate the plausibility. Reliability and validity issues are therefore not an issue here in the same way that they might have been in statistical work, for example.

The steps taken to read the texts were undertaken to necessitate '*... a discussion of associations, cross-connections and contradictions between groups of terms and their everyday uses*' (Banister et al, 1995, p103).

7.5.5 Limitations

The analysis, being interpretive, was open to counter interpretation. It also used labels that were associated with a contested theory (the Information Society), since these have helped to inform the development of the text. It was recognised, however, that the intellectually suspect nature of these ideas could alienate other readers who might otherwise draw similar readings from the texts.

Another concern was that the documents selected for analysis may have been highly idiosyncratic because of the way they had been selected and therefore might not represent other settings. However, that was an inevitable consequence of a case study approach and was necessary to allow the workings of the policy process to be studied. The fact that these were documents being used by specific practitioners in the relevant schools sector was a limitation in terms of generalisation, but also was what gave the selection ecological validity.

The thesis was sensitive to the criticism that CDAs overreach and make claims about huge areas of social practice based upon small samples of material. The thesis was cautious then in what it claimed from its analysis. This was inevitably a partial and local account of a 'policy to practice' case study based in North London and as such raised questions of generalisability that must follow from the results of any limited case study.

The thesis also recognised potential researcher bias and error in the interpretation of the analysed documents. For this reason the thesis has been explicit about the sources of ideas and theoretical perspectives in the work, as well as the details of the CDA being used. By also claiming no more than an interpretation aiming at coherence and plausibility the thesis does not claim to be an objective, scientific study in a positivist sense. However it presents its judgments as the result of a transparent well-structured process of investigation and as a result discloses the relevant factors producing the conclusions. In this way its interpretations are open to interrogation and other, possibly contesting interpretations, are not excluded.

7.6 CONCLUSIONS

The methodology provides clear steps for answering the Research Questions and for drawing plausible readings of the written texts analysed. The methodology proposes using Banister's version of CDA and this helps approach analysis of the policy process in a structured and recognised way. By having two additional steps the methodology proposes using separate theories developed by Wodak and Bell in order to extend the investigation. Wodak's additional step helps uncover whether there has been a change in the discourses of groups over the time frame being researched. Applying the CDA to Bell's axial principles helps further understand what the discourses identified in the previous steps are. The unique use of Bell is a central contribution of this work.

The methodology has established a case study through bounding the data collection process in terms of links between national policy and teachers based in North London Secondary schools. It has established clear constraints to what is being analysed through identifying the specific people involved, the documents being read and the CDA method to be used. It has also clarified the role of the earlier literature reviews involved with policy sociology, the historical context of the relevant policy process and Bell's theory of axial principles. In so doing the thesis has established a unified case that will help address the issues of RQ3.

This chapter discussed approaches that could be used to generate evidence for the research questions. The theory of Critical Discourse Analysis (CDA) has been discussed as an approach to achieve this. Finally the methodology that the analysis will take has been detailed and an assessment made of what the analysis can and cannot be expected to achieve.

The following chapter presents the findings from the document analysis for the first case study (1995-2005).

CHAPTER 8:

RESULTS OF THE POLICY ANALYSIS:

PART I

8.1 INTRODUCTION

Having completed the analysis as outlined in the previous chapter, this chapter presents the results. The chapter comprises the findings from the two-part research approach. Part 1a presents the representatives who are referred to as actors (Ball 2008), and part 1b presents the documents selected. Part 2a will present the results of the CDA and part 2b will present the outcomes of the additional two steps.

The chapter will conclude with a discussion of the findings. In doing this the chapter attempts to answer RQ3: *What concepts can be used to explain the influence of the policies? Are these Educational concepts? If not, does this make a difference?*

8.2 RESEARCH FINDINGS: POLICY PROCESS

8.2.1 Actors

Part 1a of the research approach was to identify the key actors who within the context of this case formed part of the process of enacting policy, and so could nominate documents for analysis. The key actors represented a mix of people working either within English Secondary schools in North London or from bodies that worked with these Secondary schools. All were selected because of their role in giving or supporting teachers' practice in light of current policies. They included representatives from Becta, from Cambridge Education, from one London Borough Council, from a City Learning Centre and from North London Secondary schools. These key actors were chosen according to the following process: Head teachers of 10 English Secondary schools in North London were approached and asked to identify the person most likely to influence the use of ICT in their School. Each head

teacher nominated a person. This person was then asked to nominate key documents that they had used in this process. The request to the head teacher produced a range of different staff, including a technician, two deputy head teachers, two heads of department, a bursar, an ICT director, two assistant head teachers, a CLC Manager and a Local Authority Senior School Improvement Officer. Table 8.1 provides a description of the institutions these people represent.

Table 8.1: Membership of Actors

Institute	Description
Becta (The British Educational Communications and Technology Agency)	A non-departmental public body of the Department for Children, Schools and families in the UK. Government's lead agency for Information and Communications Technology (ICT) in education, covering the UK. Supporting and working within schools in English Secondary schools as advisors and officers.
Cambridge Education	Cambridge Education is part of Cambridge Education Limited a company that has provided expert educational advice and support services in the UK. Currently working in North London Secondary schools in partnership with the Local Education Authority.
London Borough Council	The local authorities responsible for education of all state schools in their area. Supporting and working within schools as advisors, consultants and officers.
City Learning Centre	A facility in the UK, which provides state-of-the art ICT, based learning opportunities for the pupils at the host school, for pupils at a network of surrounding schools and for the wider community.
Secondary Schools	An educational institution where the final stage of compulsory schooling takes place, following on from primary education.

8.2.2 Documents Selected

Part 1b of the research approach was to establish the list of documents to be analysed. Below are the documents selected according to the criteria described in chapter seven section 7.5.1 (Table 7.2: Reference Criteria for the Selection of Documents). For a full list of nominated documents please see appendix I.

Table 8.2: Short Listed Educational ICT Documents Included in this Research

Year	Title of Document	Organisation
1997	Preparing for the Information Age: Synoptic Report of the Education Department's Superhighways Initiative	Department for Education and Employment (DfEE)
1997	Information and Communications Technology in UK School: An Independent Inquiry	National Council for Educational Technology (NCET)
2002	Connecting Schools, Networking People: ICT Practice, Planning and Procurement for the National Grid for Learning	British Educational Communications and Technology Agency (Becta)
2002	Transforming the way we Learn: A Vision for the Future of ICT in Schools	The National Grid for Learning (NGfL) and Department for Education and Skills (DfES)
2002	ImpaCT2: Learning at Home and School: Case Studies	British Educational Communications and Technology Agency (Becta), and Department for Education and Skills (DfES)
2003	Secondary Schools – ICT and Standards: An Analysis of national Data from Ofsted and QCA	Office for Standards in Education (Ofsted) and Qualifications and Curriculum Authority published by British Educational Communications and Technology Agency (Becta)
2003a	Fulfilling the Potential: Transforming Teaching and Learning through ICT in Schools	Department for Education and Skills (DfES)
2004	ICT in Schools: The Impact of Government Initiatives Five Years on	Office for Standards in Education (Ofsted)
2005	Harnessing Technology: Transforming Learning and Children's Services	Department for Education and Skills (DfES)

Not all are 'policy' documents as conventionally understood but the way they were chosen by the actors is taken to be part of the policy process nevertheless. This is important in terms of the distinctive contribution of this thesis. As Ball discusses in

his policy sociology, a policy is a set of disparate documents and actors interacting in diverse ways. The fact that these documents were chosen as documents having an important role in the introduction of ICT in schools according to those who enacted policy is the key to understanding their relevance to the thesis. The fact that these are not so visible in other policy analysis suggests that these other studies have failed to account for part of the policy process. This is a central contribution of the thesis in that it makes explicit the process involved in policy reform.

8.3 POLICY ANALYSIS

Having successfully accomplished Part 1a and 1b of the research approach by establishing a list of documents, which would serve as the focus of the CDA, Part 2a involved analysing these using Banister's CDA approach which can be found in chapter seven, section 7.5, table 7.3 (Banister 1994, p96-104).

8.3.1 Step A: Description of Text

The texts that have been analysed for the purposes of this research include nine Educational ICT documents aimed at English Secondary schools. Each document has been produced by an agency that works on behalf of or in partnership with the UK Government. Each document has been analysed separately at first, but as noted in section 6.3 (Research Approach), intertextuality is a key concept of CDA whereby texts are understood as being in a discursive relationship with each other. Therefore whilst recognising the individuality of each document, the results also consider how the texts relate to each other. In presenting the analysis, all documents from this period are considered together in this chapter.

8.3.2 Step B: Free Association to the Text

In Banister (Banister et al 1994, p97) this is seen as particularly useful when dealing with images or anything other than writing. However, this step was helpful in identifying the objects and items used in the CDA. For example reading the documents several times and then thinking about the association and connections to Education, ICT and any other educational themes helped to sift out items and objects which are formalised into the list used in the CDA. For example, 'education' suggested teachers, schools, pupils, head teachers; ICT suggested ICT technicians,

software, hardware and so on. Testing the associations with a range of other people from the research community, educational workers and others, associations that were not common were sifted out. In this way a list was formed that was widely recognised and seen as relatively stable and clear. The process was empirical. It consisted of me reading the documents in the case study and free-associating with the text first. I then presented the texts to teachers and colleagues with whom I worked and asked them to also free-associate. This was largely done in an informal way so that it captured initial, largely unreflective responses. This was helpful in avoiding over-theorised ideas that might have been presented had I given people too long to work in this area. Banister is clear that this part of the process should be one, which encourages initial thoughts and ideas, that the associations should be just that, initial impressions, rather than the result of too long a process of introspection.

8.3.3 Step C: Systematically Itemised Objects, Step D: How the Objects are Spoken about, Step E: Systematically Itemised Subjects and Step F: Reconstructing the Differential Rights to Speak

These four steps were completed together. The items and objects that were identified by an initial reading of the 9 documents are listed below:

1. Teachers
2. Pupils
3. School leadership – Head/Leadership/Governors
4. Parents
5. Technical Support Staff
6. Business
7. Government
8. Homes
9. Schools/Colleges
10. ICT Hardware
11. ICT Software
12. ICT Generally

It is noteworthy that ICT hardware, ICT software and 'ICT generally' (any parts of the texts that talk about ICT without specific reference to how it is embodied) are presented as three separate items. This is because in the documents there is

discussion of the hardware and software separately, and in addition, ICT is discussed in general terms without any specific reference to hardware or software. In this 'general' sense it is to do with ideas about ICT, which cannot be categorised as hardware nor software. For example in the document 'Secondary Schools ICT Standards' (Becta 2003) there are statements on several pages such as, '*Good ICT opportunities lead to higher standards, ICT can create innovation, ICT can create confidence*'. These were read as being about 'ICT Generally', since it is not clear that these are about either hardware or software *per se*. It is through the list of items and objects (people are included in this), that the text's discourses are identified.

The identification of this list was dependent upon reading the texts with reference to aspects of the research project in mind. Selection of 'business', 'ICT hardware', 'ICT software,' and 'ICT generally' were partly chosen because of this awareness. Analysis of educational objects such as schools and colleges, and related persons such as teachers and pupils, were selected because they were considered essential aspects of English Secondary schools, the domain the thesis is focused on. It was out of the initial reading of the documents that the 12 items/objects were selected.

The documents were then re-read for each list item, focusing on the ways in which each item/object on the list (e.g. teachers) were discussed. This made it possible to map out all the ways in which 'teachers' were referenced in the documents. From this it began to become clear how the documents in which these statements were embedded were constituting each object in patterned ways.

Certain list members were discussed more than others were. So, for example, 'teachers' figured to some extent in all the documents. This was not a surprise given that the documents were all related to schools and ICT. It would have been remarkable if teachers had been absent. Yet other objects such as 'business' were sometimes absent from the documents.

The absence in one document of any reference to an item/object was read in relation to its absence or presence in others. It was in developing an awareness of the relationship between documents that a nuanced reading was possible that gave an insight into the changing context for this policy work.

This initial reading of the documents showed that explicit references to ICT generally were high, as were references to the specifics of ICT, hardware and software. Only one document did not specifically reference software: this was 'Fulfilling the Potential: Transforming Teaching and Learning through ICT in Schools' (DfES, 2003a). However, all discussed technology at length.

Schools, teachers and pupils were also referenced in nearly all the documents. This was not surprising given that these documents were primarily aimed at teachers. But even for these three items there were omissions. Pupils did not appear at all in 'Fulfilling the Potential: Transforming Teaching and Learning through ICT in Schools' (DfES 2003b), for example; and overall pupils were only referred to two thirds of the number of times teachers were.

The presumed audience for the documents were teachers and therefore the inequality of the number of references may be partly explained by this. However, in terms of how these items/objects were being used to structure the various discourse of the documents, arguably, the emphasis of teacher over pupil references enabled the discourse to more easily ignore pupil interests.

Similarly, the number of times the schools were referenced throughout all nine documents hugely outnumbered the times homes were referenced. Again, in this initial stage I began to place the dominance of institutional voice over domestic voice as a key structural element in the discourse generated across all the documents. Only in one document ('Preparing for the Information Age: A Synopsis Report of the Education Departments Superhighway Initiatives'; DfEE 1997b) did schools not appear and in that case neither was there a reference to homes. Again this was consistent with the assumption that the documents were assumed to be largely aimed at workers in schools and related to professional interest groups rather than parents. 'Home' in the context of this reading was positioned as being opposed to school. Home was assumed to have a different set of voices and powers than that of schools.

This connected with mention of 'parents', which, even when considered alongside 'homes,' was less of a focus than 'school/colleges' or teachers. This also connected

with the way discourses about teachers were distinct from and more prevalent than those about pupils. This suggests that in these texts, pupils are positioned separately from schools.

School leadership's presence in the documents was significantly less than that of pupils. In one of the documents ('ICT in UK Schools: An Independent Inquiry'; NCE 1997) leadership was absent and in no document were they talked about more than 'teachers'. Indeed in several, 'teachers' were much more the focus than the leadership. Yet the distinction between school leadership and teachers was not necessarily an obvious one to construct, given that in schools the leadership is mainly composed of senior teachers. In as far as teachers were school leaders, the assumption of difference between school leadership and teachers was at least partly presumptive of other things, such as that a Managerialist culture created a big difference between discourses of teachers outside of management and those within management. However, knowledge of the historical context of these documents (see earlier chapters) suggested that the development of a Managerialist culture was prevalent and relevant in understanding the reasons for making this distinction.

In terms of the 'right to speak' it was clear that simply counting mentions of a group merely gave a first impression that then needed to be further developed. The fact that technicians were by far the least frequently mentioned item/object in the overall text immediately suggests that this group was a submerged, largely suppressed one. This was confirmed by examining the list of ways in which they were described. Not only were technical staff mentioned fewer times than any of the other items/objects but also they were also overwhelmingly presented in negative terms. In terms of a discourse then this was a group that was absent from the text for much of the time and one that was *spoken about* negatively. For example in the document 'Connecting Schools, Networking People' (Becta 2002), technical staff are seen to be expensive even if they are a resource that is needed. In another document 'ICT in Schools: The Impact of Government Initiatives Five Years on' (HMI 2004), technical staff are seen as rarely well used in Secondary schools.

In terms of overall presence, 'business' is not mentioned anywhere near as many times as schools, ICT generally, pupils, schools or ICT hardware. However, when it

is mentioned, it has the highest proportion of positive comments of any group. For example in the document 'Transforming the way we Learn: A Vision for the Future of ICT in Schools' (NGfL, DfES, 2002) the connection between education and ICT is seen to boost industry and commerce (p4) and businesses claim to be "full partners" in educational developments (p5). Indeed it is the only item/object to be the focus of more positive statements than negative ones. Only 'pupils' come close to this, having nearly half and half positive to negative ratio.

This illustrates how reading the details rather than relying on the prevalence can help uncover how the discourse is constructing its key messages. On the same principle that suggests that technical staff are not writing these texts, the fact that most statements about Business are positive suggests that Business is a group empowered by the dominant discourse in the text.

8.3.4 Step G: Different Versions of the Social World Co-Existing in the Text

Within the text there are several co-existing worlds. Schools, homes and businesses are all referenced, but even within these there are sub-divisions, which are all subtly interrelated. So for example schools have the interconnected but still separable social worlds of teaching staff, pupils and non-teaching staff. These all have different relationships to ICTs as well as each other. Within these social worlds there are further divisions that have to be noted. For instance, within these documents head teachers are positioned as separate from teachers and there is an assumption of a different social reality for these groups. So when it is stated that teachers have a particular attitude towards ICT, we have to consider whether this includes head teachers. A further aspect of these social worlds is that there are marginal groups such as technicians who function as neither fully teacher nor non-teacher staff (non teacher staff include people like administrative staff, catering staff, cleaning staff, site managers and others). One of the clearest things to note here about the social worlds co-existing in schools is that they are hierarchical in relation to each other. The way that this hierarchy is created in these documents places head teachers at the apex and technicians at the bottom.

The text is creating certain assumptions about hierarchies in schools. However, it is interesting that within the same documents, where there are examples of projects

showing ICTs as having a positive impact, they tend not to be described as top down initiatives from head teachers but rather small scale projects brought about by teacher enthusiasts and champions or by interaction between teachers and interested researchers from outside of schools.

The reading in acknowledging this recognises different discourses in the text. The discourses are not all equal as they do not have the same presence nor are they spoken about in the same way. For example the discourse about pupils largely positions them as disengaged from schooling. Their relationship with ICT places it as a required stimulus to reengage them with the learning process. The social world of the pupils is therefore dovetailed with the world of ICT in a relationship that shows pupils as in deficit but ICT as potentially reinvigorating. The discourse presents a negative social world for the pupils while ICT is given the potential to overcome their failings. Similarly, the discourse about teachers presents them in terms of an ICT skills deficit. This restricted view of a teacher's world serves the interest of other voices offering to overcome each identified deficit. This discourse presents teachers as being to blame for the failure of ICT to fulfil its potential. What is missing in this version of the social world is a more inclusive view of education and pedagogical thinking.

8.3.5 Step H: Imaginary Authors' Responses to those who Contradict

What Banister asks us to do in the analysis is to imagine what the author would say to someone who tried to challenge him or her. This is done so that we can begin to fully understand the meanings that are congealed within the text.

The analysis thus far suggests that such an author would focus on the economic to justify their statements. What they would claim is that what they said about the economic was not an opinion or an elaboration of a value system, or a reflection of any sort of self-interest they might have. Rather it would be articulated in terms of 'facts about the world'. In this way they would reassert 'common sense knowledge' about the world as it is today, suggesting that anyone debating these facts was either ignorant or an idealist dreaming of some unrealistic, unobtainable utopia. They would also reassert the view that it was the unfulfilled potential of the technology that was a key factor in any evidence that ICT had not yet made a big impact on the

economic world. This would support the view that teachers were not skilled in using the technology and so the power of the technology was being underexploited.

The 'facts' they would use would be discourses about Globalisation, the new market place, the need for new skills, the centrality to economic well-being of information and knowledge, the need for everybody to be ICT literate, the threat of other nations up-skilling faster and therefore gaining a competitive edge. This economic vision would be articulated in a way that excluded the right of disputing its conclusions. It would position schools and education as needing to be about these things. In this, it would echo the hegemonic voice of the New Labour ideology.

To answer anyone disputing the need to retrain teachers and transform schools, the same 'facts' articulated above could be used to argue that the teaching workforce and the institution of the school needed to update itself, in particular through its need to be ICT-literate, in order to stave off the economic threat. Beneath this defence may also be suggestions of a social inclusion agenda, but this would largely be defined in terms of ensuring that the workforce being produced by education was maximally prepared and efficient rather than in terms of social inclusion or personal wellbeing. Arguments for alternative values for education and society could be countered in terms of the urgency of the situation and a hostility to a 'liberal agenda' that was rooted in an outdated and elitist view of education and society. A politics of aggressive inclusion and mobility brought about by the transformation of schools would be drawn upon and ICT as a technological fix would be used to dismiss critics who suggest that values other than technological efficiency are required for a properly functioning society and school system.

8.3.6 Step I: Contrasts between Discourses

Within the text, there are different discourses that contrast with each other. One discourse speaks of the future and often prefaces the documents. This discourse is often explicitly the discourse connected to government or a government agency and is present at the beginning of several texts. Such positioning helps this discourse anchor the meanings of the later discourses. This discourse speaks with an urgency and passion for transformation, recalling the sorts of voices used to rally groups to great endeavour. This is the discourse of potential, where ICT is something with the

potential to transform rather than having actually achieved transformations. This is a feature of all nine of the documents, implying a continually deferred future state of achievements. So in the forward to 'Preparing for the Information Age: Synoptic Report of the Education Department's Superhighways Initiative' (DfEE 1997), ICT is discussed in terms of an intention to transform education and of being a tool for tomorrow's economy and society. It talks about how crucial it is that senior management in schools get involved in ICT work, implying that currently they are not (DfEE 1997, p81). Teachers are discussed in terms of not being good enough to use ICT well enough to achieve its transformative potential (DfEE 1997, p8-10, 22, 31-35, 43, 44, 67, 76-78, 88). In the later document of 2003 ICT is being linked emphatically to the potential raising of school standards but it is still only its potential that is being discussed rather than the establishment of such success (Becta 2003). There are many comments about how good ICT opportunities potentially lead to higher standards without reference to achieving such on any significant scale (e.g. Becta 2003, p8, 11-17, 20, 21, 23, 24, 27, 28, 32, 33, 37-39, 41-43, 45-47, 50, 51).

Often the discourses are signed off by government ministers and are definite, certain, confident that what they speak of will come about, as for example when we read in the foreword to one that ICT is a tool for tomorrow's economy and society capable of transforming education in partnership with private enterprise (DfEE 1997). In another we read that ICT can achieve more than '*...through traditional means*' (DfES 2005, p3), that ICT is changing lives already (DfES 2005, p4) but in the future will make a major impact on schools, having the potential to be flexible, to motivate (DfES 2005, p8), to deliver benefits for all (DfES 2005, p8), to increase good citizenship (DfES 2005, p18-21), to transform teaching and learning (DfES 2005, p26-30), to transform the work of front-line staff (DfES 2005, p32-34), to support leadership and management (DfES 2005, p36-38), to develop children's services (DfES 2005, p60-63), in one high moment of confidence ICT has the '*potential ... to transform everything...[and] ... help us achieve our highest ambitions for education*' (DfES 2005, p67).

This is the discourse of political prophecy, a blend of futurology and policy spin. Its aim is to inspire and rally its target audience towards striving to achieve a common goal and overcome a common threat in the futures. Not only do the documents talk

about the potential to transform education but in DfES 2003 it is written about as being '*...not an end in itself but an enabler of broader changes of... [a]... reform agenda*' (DfES 2003, p4). Key elements in that agenda are the economics of Globalisation, of the Information Society and the value of Knowledge as an Economic good rather than as a good in and of itself, as discussed in previous chapters. Schools are often called upon to collaborate with business to bring about the potential ICT offers (e.g. DfES 2003, p4, 8, 9, 11). Managerialism is also part of this wider reform agenda, largely replacing competing values, such as public service. Yet a contradictory element is also apparent in the documents, with the occasional reassurance that transformation will also mean the preservation of traditional educational values. So for example we find in one document a statement about how new ICT software brings the potential to achieve more than through traditional means (DfES 2005, p3) and several references to how it will transform teaching and learning (see above) whilst also claiming that ICT should '*complement traditional teaching*' (DfES 2005, p9).

Before moving to the next discourse, it is interesting to note that government does not appear much in the documents and when it does it is categorised negatively. These two facts would suggest that government was insignificant but this would be to misread the situation. Explicit reference to government is relatively small in the text, though it is still more frequent than the number of times parents or technical staff are mentioned. However, the fact that the explicit presence of government is in the preface to the documents gives government great importance. Its influence on the rest of the writing belies the appearance of minimum presence. The government is linked to the discourse of transforming futures, of the potential of ICT to transform all aspects of schools, as discussed above.

The text presents the government as linked to this discourse, one that implies that schools are sites of unfulfilled promise in the face of economic and technological needs. The reading positions the government as important and engaged in the business of bringing about fulfilment of that transformational potential in schools (e.g. DfESa 2002, p3-5, 17, 22). Contrast this with parents, for instance. Parents are not only less present, but they are also largely a presence that is discussed rather than one with agency. Interestingly parents are nearly fifty/fifty positive to negative in the

comments about them. One reading of this is that they are being positioned to emphasise the need for schools to connect with homes and parents in order to ensure the vocational discourses of inclusion are better developed in the future. They, like both homes and schools, are discussed in terms of their potential to be transformed by the reform agenda (e.g. Becta 2002, p16; DfEE 1997, p89; DfESb 2002, p30, 32-34).

The government involvement in the discourse is explicitly found in the preface of each document. The preface is written in a style of speaking that is presented as disinterested and objective. This style is to reassure the reader that it is merely reporting facts and is in no way expressing an opinion, and is therefore making a claim of objectivity that gives the message authority and legitimacy. This style, which is prominent in most of the documents, is one that helps eradicate any sense that what it is saying can be contested or approached from a different point of view. The style is largely devoid of emotive expression. It complements the inspirational charismatic style of prefaces with a new focus on the effectiveness of policies. Its focus is on the 'ongoing' nature of the reform, discussing the issues where what is being reported is the current state of play, a moment in a process that is still developing. Its elements are the transformation of education in terms of the presence of ICT and the development of practice and knowledge within schools to enable eventual success. The measures used for assessing the impact of ICT and on schools are not presented as problematic; the question of how transformed educational standards compare with non-transformed standards is unasked. Although there are references to the difficulty of measuring the impact of ICT on standards independently of other factors, results purporting to do this are presented as if not problematic.

There are other groups in the reports, for example the voices of individuals largely partaking in some ICT project or expressing their opinion about the introduction of ICT into their school. Although many groups are reported to cohere, overlap and agree with the dominant discourse, these can also be signs of resistance. Where a single group speaks against the dominant view of the text, this can be an effective reminder of dissention and of other, excluded voices and positions because it is so rarely present. Dissatisfaction with the core concerns of the texts above, linked to

anti-managerialism, anti-ICT feelings, anti-vocational educational priorities and political values that challenge the dominant ideological ones are glimpsed.

8.3.7 Step J: Points where ways of Speaking Overlap

Ways of speaking overlap when ideas of Globalised economics, Information Societies, Knowledge Economies and the centrality in this new economic landscape of a defining technology, ICT are raised. Though mainly expressed in two styles, the preface and the report, these strongly overlap. Even where the report gives figures that suggest ICT is not succeeding this is placed in the context of an overarching discourse that claims that there is no alternative. Negative impressions and facts about the impact of ICT on schools work to endorse the overall project, which is to strive for greater effort in the future. In this way the ways of speaking complement each other by restricting potentially problematic interpretations.

The government discourse is the dominant one, presenting its economic and technological enthusiasm through two styles of presentation, the preface and the report, to great effect. Ways of speaking about teacher are largely couched in terms of blame, where teachers are discussed in terms of their deficit in required ICT skills (see above). Pupils are presented as largely disaffected with schooling that is ICT poor. They are also being denied entry into the knowledge economy because ICT provision is poor (e.g. NGL, DFES 2002, p4, 10). Together, the discourses can be read as overlapping in creating the technological potential of ICT for schools, with the teacher and pupil discourses, for example, both presenting discourses of deficit in the face of this potential. All the discourses in the text in fact present much the same overlap through the relationship of each discourse to the dominant one.

8.3.8 Step K: Comparisons with other Texts to Assess how these ways of Speaking Address Different Audiences

The text is heavily critical of schools in relation to the way it has introduced ICT. Schools are seen as failing to train teachers adequately, provide adequate ICT resources, manage the requirements of ICT so that the potential of ICT is fully realised. Schools are spoken about as failing to utilise the business community well enough to ensure excellent procurement deals and that their management of ICT is generally poor. Teachers are spoken about as having failed the technology by being

incapable of using it so that its vast transformational potential can be realised. Similarly, parents and homes are also spoken about as failing to utilise the full potential of the technologies, as are pupils. A significant element of the discourse in the text then is its emphasis on the failure of ICT users to realise the transformational potential of ICT in all aspects of schooling and education in this Secondary sector.

This contrasts with other texts that discuss ICT in a different way. Woolgar and Grint's approach discussed in chapter six discusses technology in terms of anti-essentialism which denies that technologies are fixed in their application and meaning. Their approach, and the other approaches discussed in chapter six that give a greater role to those of technology users in deciding what a technology means, and therefore what its potential can be, conflicts with the discourse of blame found in the case study. The case study's discourse offers no role for the blamed institutions and people to talk back to the technologies. Nor is there any room for questions to be raised about the asserted 'huge transformational potential' of the technologies. The discourse speaks of ICT as having a fixed meaning, one that includes this potential to transform schools and education. This is presented as a fixed, essential trait of the technology itself, whereas Woolgar and Grint's approach suggests that the relationship between technology and the use and value of it is a matter of interpretation and negotiated meaning. Woolgar and Grint make a case for the claim that how a technology is interpreted requires a subtle interplay between designers, users, and other actors engaged with the technology. In their approach the meaning can't be fixed and then used to blame others if its essential nature isn't realised by its users.

In this contrasting text, therefore, we find an approach that helps highlight the fixed views that the discourse presents. It denies any role for the interpretationalist approach of Woolgar and Grint and so dissolves the need for actor participation in the interpretation and evaluation of technology. In fact, as Woolgar and Grint say, the discourse in the case study rather presents the meaning of technology in terms of '*deus ex machina*' which, as Woolgar and Grint say, '*...refers to the convention of god appearing in the sky*' (Grint and Woolgar 1997, p2). The idea is used in their text to convey the view they oppose, the one that is found in the case study, that '*... it is the essential capacity 'within' a technology which, in the end, accounts for the way*

we organise ourselves, our work and other life experiences' (Woolgar and Grint 1997, p2).

By contrasting the case study with this other text it is possible to see which audiences are being addressed. The audience of the case study is positioned as being compliant and under the controlling authority of the discourse. It is invited to merely agree with what is being said about the technology, to accept the claim about its transformational potential. In so doing the audience are then required to understand that any failure to realise the potential must be the fault of forces outside of the technology itself. The discourse of blame is one that follows from accepting the terms on which ICT is being discussed in the discourse.

Contrasted with this, Woolgar and Grint's text speaks in a different way to its audience. The audience is invited to participate in making the meaning and therefore the power relationship between the technology and this audience is very different from the relationship embedded in the case study. The technology is not fixed in what it can do and what it will do and so the relationship between it and the way it is spoken about in Woolgar and Grint's text is much more democratic and inclusive.

The contrast of the case study with this text therefore highlights the power relationship implicit in the case study. The case study discourse is authoritarian in terms of the way it presents its ideas about technology. Technology is presented as having given, fixed and non-negotiable values and powers and the audience is required to define itself as having a responsibility to use the technology according to this fixed view. It is a view of technology similar to that held by Veblen as discussed by Bell. Contrasted with this, the anti-essentialist, interpretivist approach of Woolgar and Grint's text creates a different audience, one which is invited to have a role in deciding what the purposes and meanings of technology are for them. The power relationship between the technology and the audience in this is more equal and open to accommodating a range of different perspectives.

By contrasting the case study with the Woolgar and Grint text it is clear that the case study discourse has created an audience that is being instructed what to think and do and not engage with questions about alternative understandings of what the

technology might mean for them. The contrast has made clear that an essentialist view towards ICT is central to the case study discourse and that in turn this assumes a certain relationship to its audiences (Grint and Woolgar, 1997).

8.3.9 Step L: Terminology to Label the Discussion

Where appropriate, the discussions identified in the preceding sections have been labelled using terms that have already been explained in earlier chapters (primarily the literature reviews). However, the case study analysis identified some areas of discussion that did not map so neatly onto existing topics.

The following discourses were identified in the analysis, but because of their close match to discussions within the literature review, they have been labelled using existing terms, for consistency:

- Education is vital for the Knowledge Economy
- ICT is vital for the Knowledge Economy
- Education is vital for the Information Society
- ICT is vital for the Information Society
- Education is vital for Economic Globalisation
- ICT is vital for Economic Globalisation
- Educational institutions should adopt Managerialist practices
- ICT enables Managerialism to operate more effectively
- ICT is a force for change

For example the discourse '*ICT is a force for change*' is made up of source comments from all the documents in the discourse analysis. As an example of a small sample of these source documents we find claims that ICT will bring about a big improvement in ICT services (DfES 2005, p6), has had a big impact on some schools (DfES 2005, p8), ICT supports the role of parents (DfES 2005, p4), can attract new learners and achieve more than through traditional means (DfES 2005, p3), technology is the key to personalised learning (DfES 2005, p3), ICT is changing lives already (DfES 2005, p4), is a catalyst for new relationship between pupil and teacher (Becta/DfES 2002, p13), has the potential to engage with gender issues (Becta/DfES 2002, p16), is transforming society (NCET 1997, p12), 85% of Headteachers and school leaders think ICT has the potential to improve teaching

and learning (NCET 1997, p80), ICT inspires young people (NCET 1997, p17), that there are potential gains with ICT for school (NCET 1997, p8), there is a big impact of confidence of teachers (NCET 1997, p8) and there is a potentially huge impact on teaching and learning (NCET 1997, p4-7, p15, p23).

The following discourses were also identified in the case study texts. While they may be present in the background literature that was reviewed, they were not so clearly and coherently identifiable in earlier chapters. However, now that the analysis of these texts has shown them to be consistent and relatively stable discourses, it might be possible to identify them by re-reviewing that literature. These are:

- Teaching can be improved:

This groups together the following claims: that teachers need to be developed so that the potential of ICT can be realised; that they are holding back the tools, rather than tools holding back them; and that they need to be subservient to the tool (an idea linked to discourse of Information Society)

- Learning standards can be improved:

This discourse is about the claim that schools are acting as a barrier to home ICT use; ICT learnt at home is not being utilised for ICT at school (an idea linked to discourse of Information Society)

- Leadership can be improved by ICT:

This discourse claims business and government are key agents in school ICT leadership because business and government represent ICT in schools therefore the underperformance of school leadership effects ICT (an idea linked to discourse of Managerialism)

- More ICT investment is good:

This discourse claims that schools should invest more and more into ICT and its potential; and that any underinvestment in ICT will hamper ICT (an idea linked to discourse of Knowledge Society)

- Participation can be improved:

This discourse is a claim that pupils and teachers need to participate and become more involved in the potential of ICT (an idea linked to discourse of Globalisation)

- Pupils are disengaged:

This discourse is claiming schools are failing to match the authentic

environments of ICT; and as a result pupils are disengaged from the ICT (an idea linked to discourse of Information Society)

The two lists combined together present fifteen discourses. The fifteen discourses are present throughout the documents analysed for the case study and can also be seen within the literature review. However, in the literature review they tend to be more dispersed than in the case study, which is why they have been separated out and listed in two separate sections.

8.3.10 Step M: Where and When these Discourses Developed

The thesis has in earlier chapters looked in detail as to where the discourses developed. Chapter two looked at the history of government policy and funding connecting it to the New Labour ideology that linked notions of an Information Society and Knowledge Economy to Globalisation and the role of ICT, an ideology that has its roots in an earlier Conservative Government largely connected with Mrs Thatcher. Chapter three further developed this understanding by looking at the role of policy and the development of a general policy discourse. Chapter four looked at those who contest the policy discourse in various ways. Chapter five linked it with a historically earlier discussion about Post-Industrialism and a sociological theory of Daniel Bell.

Nine discourses were found in the analysis of the policy documents that were consistent with the preceding literature review and which were easily labelled using terminology found within that review. These discourses, together, convey much of what was happening in the case study texts. However, a further six discourses were found that were related to the earlier nine but were not so visible in the literature reviewed in chapters two to five. These offer a further refinement to and development of the original discourses. Therefore, the thesis ended up with fifteen discourses identified by the case study.

Although the case study documents were produced between 1997 and 2005, the fifteen discourses were doubtlessly present throughout a much longer period than that. So, for instance, in the literature review these discourses can be traced back to early work about the Information Society, which was developed in the 1960s.

8.3.11 Step N: Description of how the Discourses have Operated to Naturalise the things they Refer to

This step is about the logic of the discourses. For example, one discourse assumes a certain economic need, assumes that technology helps the economy, suggests evidence that shows that people cannot use technology and infers that therefore the technology must be learned in schools. The previous steps in this analysis have shown how each document has positioned the different groups and embedded them in a text in a way that differentiates between them in terms of the power they have to act, speak or influence others. The text foregrounds ICT as the single most referenced item/object. When references to ICT generally are taken with the references to ICT hardware and ICT software, technology becomes the dominant item/object in relation to all others. In so doing it becomes natural to assume that this is the only way to think about the relationship of ICT to schools. Technology rather than schools, pupils, teachers, parents and so forth drive the policy reform. This influences the way people come to think about ICT in schools and education, naturalising it as the necessary means for achieving transformation.

It's possible to read the text as contrasting the presence of ICT hardware and software in schools with the discourse of ICT skills deficit that frames discourses of teachers, pupils, homes and various other users and stakeholders throughout the text. In this way, a feature of the discourse is revealed: the naturalised presence of ICT taken together with problems in its use establishes the need to counter the skills deficit in these groups. The overwhelming presence of ICT becomes in itself a reason to focus on the 'up-skilling' of teachers, pupils, parents and other stakeholders.

It is possible then to read the high number of references to teachers and pupils, for instance, as a requirement of establishing their subservient role to the technology. The overwhelmingly negative presence of teachers and pupils is something that is created by discussing teachers and pupils in terms of their inability to use ICT. Imagining a reversal of this relationship would enact a very different perspective, whereby ICT would be seen as failing teachers, rather than teachers failing ICT. This is an example of how the dominant discourse has successfully reversed the relationship between a user and a tool. The tool is now the dominant partner. That

this does not seem absurd is a function of the way the voices of technology, business and government have submerged other voices, placing themselves as the dominant partners throughout.

The discourse about leadership normalises the presence of businesses in the leadership of schools. Outside of this discourse, such a presence would seem abnormal. The close link between the government and business in the discourse of leadership redefines the government role. By associating government with business, the discourse legitimates the role of business and makes schools accountable to them in some respects, creating another differential of power between groups. The discourse also seeks to replace ideas about traditional agents of school leadership, such as Head teachers and Governing Bodies, with this 'government business' model. When the text talks about traditional school leadership, it talks about its failings in much the same way as it talks about teachers. The model is one of deficit and again reverses the relationship between user and tool.

Business and government are present in schools as ICT. Therefore failing ICT innovation fails business government. By reversing the role, what this discourse manages to do is to undermine traditional school leadership and make normal a larger role for business and government. For example in the document 'Harnessing Technology: Transforming Learning and Children's Services' (DfES 2005) we find statements about schools collaborating with industry (p6) and of how ICT allows a new relationship between education, employers and the private sector (p10).

The discourse about schools acting as a barrier to home ICT use again is reversing the usual way of thinking about the role of technology as a tool, suggesting as it does that school as an institution is letting ICT down in a particular way. For example the text says that there is a contrast between the skills and equipment found at School and home, where home was better equipped and better skilled than schools and that school practice and lack of equipment restricted access to the full potential of ICT. This discourse is another example of the way in which the relationship has been reversed between the user and the tool where it is the failings of the school that are presented as the reasons for ICT not working in the way in which it could. In this discourse, the failure of connection between home and school is explained in terms

of the schools' failure to invest in ICT equipment and train its teachers rather than any other factors. Again, by doing this the home/school links are discussed purely in terms of investment in ICT and any other possible factors are largely excluded from the discourse.

The discourse about pupils' disengagement also normalises something very counterintuitive, in that it suggests that the virtual reality of the ICT environment is more authentic and therefore more real to them than a non-virtual reality. This discourse suggests that this is the main reason for pupils' disengagement and therefore is the explanation behind failing educational standards. For example in the document 'Transforming the way we Learn: A Vision for the Future of ICT in Schools' (NGfL, DfES, 2002), the discourse promises personalisation, autonomy, fun, independence and improved learning through a pupils' willing engagement with a virtual reality, something that their actual non-virtual school environment is presented as denying them.

8.3.12 Step O: The Discourses' Roles in Reproducing Institutions

This links to the issue raised in the last section. The dominant presence of ICT in the text suggests that the values and ideas linked with the technology dominate the institutions that are reproduced by the discourse. In particular the school is defined in terms of ICT throughout the text. The very valuation of a school is considered in terms of its ability to successfully embed the vision of ICT. In turn the people and connected communities that constitute the school are redesigned in the light of their relationship to ICT.

It is again instructive to note that business and government have roles in the discourse and are present more than homes and parents and are only a little less frequently mentioned than school leadership. The institution of the school can be seen as being reproduced in terms of the discourse of an Economic Government Policy, embodying those concerns rather than those that schools and educationalists might prefer them to embody, such as concerns of the home and parents.

The dominant discourses of government, business, ICT and school leadership, reproduces an institution that makes these interests dominate those of teachers,

pupils and parents. The text both speaks negatively about teachers and pupils whilst at the same time co-opting them into the overall discourse. This is done in the text by only talking about them in terms of these dominant overlapping discourses. Positive value is found only in the achievement of ends defined by the dominant agenda. Hope for teachers and pupils is discussed solely in terms of the enactment of the potential of ICT in the future. Any alternatives to this have been suppressed in the text.

There is a complication to the dominant discourse and that is the recognition given in some of the texts to the preservation of traditional values. A potential contradiction remains concealed most of the time but where there are references to ICT helping to maintain traditional schooling and traditional standards there is a conflict with the competing discourse of transformation. Although it is perhaps possible to marry these two aims it is never explicitly attempted in the documents. Instead it remains as an apparent contradiction that is allowed to be vaguely present but is never fleshed out enough to disrupt the dominance of transformation.

This is a feature of the texts that highlights how there is little fine-grained discussion in any of the documents about exactly what transformational teaching with ICT in schools amounts to. This lack of detail enables the discourse to maintain a generalised commitment to the future without commitment to statements that could be contradicted by facts later on. In a sense, the lack of detail functions as future proofing, rendering the policy largely falsification-proof.

8.3.13 Step P: Ways in which Discourses Subvert Institutions

The elements appearing most in the text after ICT are teachers, schools and pupils. However, these categories are largely discussed negatively. There is a difference between this and the evaluation of ICT generally which is also largely negative. The negativity of ICT's impact is largely framed as being caused by institutional and teacher failure. Schools are embedded in a discourse that shows them as not yet having reformed enough to accommodate the new global reality of business and vocational need whereas business is positioned as having the potential to support and partner school change that has not yet been realised. In particular the fault is largely explained in terms of the teachers and pupils who are not skilled enough to

use ICT for beneficial ends.

ICT is therefore largely discussed as being failed by its users. When ICT is faulted for its inherent technological failings, these are largely discussed in terms of a recent past that has now disappeared. So the institution being subverted by these discourses are schools.

The predominant discussion is about the need for teachers to become more skilful in using the technology rather than the requirement of the technology to adapt to the needs of teachers and learners. This is another element of the phenomenon discussed above where the discourse inverts the usual relationship between people and technology. An institution that may prefer to foreground the needs of teachers and learners finds itself having that preference subverted through a discourse largely dominated by government and business voices advocating a global, ICT dominated Information Society.

8.3.14 Step Q: Who would Benefit and who would be Disadvantaged by the Discourses

As discussed in the previous sections, it is largely a business, governmental and ICT voice that is being heard in the documents. The documents can be seen to be serving the interests of these three separate groups and so the interests of the three groups can be understood as largely overlapping. The voice of business is not exclusively ICT business but rather the voice of business generally, drawing on the Globalisation, Information Society/Knowledge Economy thesis that places ICT as its defining technology. This corrects any suggestion that there is a direct motivational link between the voices of business and those in the ICT market. The predominant references in the text are to the need for an ICT literacy that prepares students for the vocational requirements of the presupposed economic reality.

Schools have largely been addressed in the text as institutions that need to be changed. In this way connected agents in the schools such as teachers, pupils and school leadership, including governors, are all created exclusively in these terms. Technicians, pupils and parents are also evaluated in such a way. What these overlapping discourses do is marginalise alternatives to this, where schools and

education are conceived of in ways not conducive to the vocational, economic, ICT-saturated and Managerialist discourses. Government discourse is advantaged so long as this hegemonic state of affairs is in place. As was noted in chapter three, the discourse of policy both proposes and resolves the problem to be solved; government discourse both expresses the idea that there is a vocational need that schools need to answer in terms of ensuring students become ICT literate and also suggests that this need is being met by the policy. Government discourse is advantaged and simultaneously disadvantages those other discourses that might challenge the ideas that the dominant policy discourse embraces.

Another criticism is the way these problems and their perceived solutions invert the usual relationships between agents and technology. Schools, teachers, pupils and parents find themselves being discussed negatively because they are perceived as being unable to fulfil the potential that ICT has, rather than ICT being criticised for being unable to fulfil the potential of these groups.

8.3.15 Step R: Supporting and Discrediting These ways of Talking

The items and objects of government, business, ICT generally and school leadership are predominately using the dominant discourse. These are the items and objects of power, which are given permission to speak and also crucially have the power to withhold the right and opportunity for others to speak within the text.

'ICT Generally' is seen as the provider of solutions to the problems that the discourses of government and business identified as problems. However, these problems are very limited in scope, addressing primarily the role of education in relation to economic needs and context. It is this narrow agenda which largely discredits this way of speaking. By suppressing a broader range of interests, voices, values and knowledge, this seems surprisingly parochial and limiting. For a discourse that speaks of globalisation and unlimited transformation this is ironic.

Research in previous chapters has shown that the discourses that foreground the technology of ICT and its relationship to economic and vocational interests is that of a general policy discourse, broader than just educational policy. Yet in the educational domain, it works to discredit the professionalism of teachers and the

organisation of schools in so far as they fail to successfully implement ICT across the institution. It dismisses the existence and relevance of alternative values to those of the techno-economic agenda.

8.3.16 Step S: Linking the Discourses

The discourse of ICT is one of potential economic and societal transformation. It is a technology that is presented as having enormous power. Linking to this is the government discourse of the potential of ICT to transform schools in order to enable young people to thrive in a new and challenging economic reality. Institutions of business and schools are presented in terms of a potential collaboration and partnership between them, which intends to achieve the economic and technological transformations required to fix deficits in the school system. Schools and their agents are largely positioned using a discourse of failure coupled with a potential to change and be “up skilled”. Links between these discourses and those of government connect the message about the transformational power of ICT to its failure to be immediately successful.

As explained in chapter three this educational policy agenda is part of a wider policy reform discourse where the voices of Globalisation, Knowledge Economy and ICT as a defining technology enabling economic power are also dominant. In this way overlapping audiences and motivations can be detected in the text. Production and maintenance of the discourses within the text can be linked and therefore strengthened by this overlap. So for example the voices of power here are largely the same voices that can be found within other public sector reform policy texts as identified in chapter three.

The analysis identified nine discourses that are recognisable from the literature review, and a further six discourses that were consistent with these but not so readily visible. In reading the documents what the thesis found was that all the discourses were linked very closely together. The discourses are so entwined that it is impossible to disentangle them.

The discourses from the texts are all linked with the nine discourses from the literature review. Throughout the texts, ‘change’ is always related to techno-

economic improvement of efficiencies. The improvement being required of teaching is solely related to the use of ICT which itself is only conceived in terms of the discourses identified in the literature review. Learning standards, leadership, ICT investment, pupils' disengagement and participation are again exclusively linked to the earlier discourses.

For example in 'Impact2' (DfES/Becta 2002, p30) the focus is on how schools and homes are not being linked and therefore the bridge between home and school is problematised in terms of an ICT deficit, as discussed earlier. This can be read as the '*participation can be improved*' discourse noted above and is linked to the discourse visible in the literature review: 'education is vital for the Information Society'. Because of the way in which the text has been written, it is not possible to disentangle these two discourses. Therefore the issue about linking home and school becomes one of economic efficiency rather than social justice.

In 'Transforming the Way We Learn' (DfES/NGfL 2002) on page 15 the document discusses the potential of ICT to enhance personalised learning for pupils. Again, this would seem as if it was using the discourse about '*pupil engagement*' and '*learning can be improved*' on their own but it is not. Both are intimately linked to the earlier discourses found in the literature review so it is only possible to read them as a combination of those discourses together. This is a common feature of all the readings.

8.3.17 Step T: Reproducing or Challenging Dominant Conceptions

What is being reproduced are conceptions already established in policy. It is at this point that the earlier work by Grint and Woolgar and the critics of the ICT policy discourse becomes illuminative. As was indicated in chapter four these critics present an alternative and a challenge to the dominant conceptions found in this text through reconceptualising the whole discourse around ICT and organisations. These writers can therefore be understood as resisting the dominant conceptions and provide instead new voices and a new conceptual space in which to explore and rethink these issues.

What these writers achieve is the ability to show alternative ways in which change

and transformation can be achieved that are not found in the dominant discourse. The discourse analysis reveals that only a very restrictive kind of future is being imagined. Grint and Woolgar et al are suggesting that this is a very stifled imagining. ICT can be much more than is being imagined in this discourse.

The documents analysed do not offer sustained critical discourses that challenge the dominant ones. An explanation may be the way the dominant discourses are able to explain both success and failure of ICT in schools, as discussed above.

The main point is that these documents are reinforcing the discourses of the Information Society, sustaining them in education even if they have been abandoned in other areas such as sociology.

8.4 ADDITIONAL STEPS

Additional Steps to Banisters' CDA

As described in chapter seven, two additional steps have been taken to develop the analysis. These additional steps add a further layer of understanding by applying Bell's axial principles to the policy process discourses and examining the chronological context of the discourses used in the policy process as suggested by Wodak.

In order to do this the thesis relates the CDA to Bell's axial principles. Then, the thesis will analyse the text chronologically from document to document to see whether discourses change over the time of the case study.

8.4.1 Step U: Applying Bell's Axial Principles

What the CDA found was that the discourse strands in the text all focused on the axial principle of efficiency, the principle that guides activity on Bell's techno-economic realm. The three realms in Bell were mapped against the discourses, all of which were about the techno-economic. This was the case even when, on the face of it, the terms were cultural and political.

For example, a clear political reading of 'participation' was anticipated when the documents discussed the connection between schools and home use. The notion of the 'digital divide' was also something that seemed to address issues of social justice and would therefore be connected to the political realm in Bell's system. However, the terms were used in the discourse as tools for enabling a more efficient establishment of the economic aims of the Information Society. The terms were co-opted by the axial principle of means/end efficiency into the techno-economic realm, and so were, arguably, no longer forming part of a political discourse.

Educational issues are considered as part of the cultural realm in Bell's system, where the emphasis was on the development of self-awareness and growth. It would have been expected, therefore, for ideas around teaching and learning to have been governed by the axial principle connected to the cultural realm. However, these themes were only discussed within a discourse that related them to the ends of the economic, governed by the principle of efficiency. Continually throughout the documents the terms and themes of the cultural were found to have been co-opted by the techno-economic realm. In none of the documents was the education of young people using ICT related to principles of self-awareness and growth. Throughout, the dominant discourse was one of making them more efficient in a context of a Global Knowledge Economy in an Information Society.

The identified dominant position could be seen as part of Bell's techno-economic Realm, therefore, and the reading had established that this was an overwhelming feature of the text. By applying the CDA to Bell's theory, what became clear was the way the discourse had managed to overwhelm the other two possible realms. What was especially interesting was to note that although the overt language of the documents seemed to refer to terms and ideas that were not of the techno-economic realm, such as 'learning' and 'participation', the cultural and political ends of those terms had been repositioned as means for an economic end. Thus the use of Bell has shown that the discourse has rendered invisible realms that might be considered vital when discussing a strand of education policy process.

For example, in the document 'Transforming The Way We Learn' (DfES/NGfL 2002) the statement that pupils will be able, once ICT is embedded in schools, to have fun

on the internet (p9) looks like a personal fulfilment statement, which is a concern of Bell's cultural realm. However, it is not being used like that, but rather is being used to back up an economic point about the need to have pupils skilled appropriately for the new Global Knowledge Economy. In the same document it is stated that a benefit of the internet is that it gives schools access to 'cultural treasures' (p15), but this is discussed in terms of the need for software to be developed and made available to schools. Again, the predominant concern is that of the economies of introducing ICT into schools and the creation of an ICT market around schools. This is a particularly vivid example from the documents of how assumptions about what is meant by 'cultural treasures' has been distorted by the discourse: even an explicit reference to culture isn't about culture, but relates instead to usefulness within an economic frame.

Most statements are directly economic in their concerns. So, for example, in the document 'Preparing for the Information Age' (DfEE 1997b), there are statements about how 'commercial providers will provide desirable and necessary openness and inter-operability' (p37) and a judgment that there are no clear economic advantages to teachers making their own resources (p27). Similarly in the document 'Transforming the Way We Learn' (DfES/NGfL 2002) there are comments about the way ICT has considerable vocational relevance for many pupils, (p20) and there are many references to the advantage to business that a link with schools will bring about. These are clearly statements about economic concerns. Similarly there are many statements that have technological concerns, even though they emerge in the context of discussions about school management and teachers. In the same document, for example, there are statements such as '*technical complexities of ICT demand much of management*' (p11) and how there was a focus on technological not curriculum matters in schools (p54).

The appearance of a non techno-economic discourse is only an illusion and the economic issue remains what the discourse is really about. So in 'Transforming the Way We Learn' (DfES/NGfL 2002) the statement that claims that ICT will help teachers support independent learning (p20) on the face of it looks like a cultural claim, directly speaking to educational value. However, as with other such statements that seem like claims of political or cultural value, it is just the dominant

discourse co-opting discourses from Bell's other realms. This is done largely by each document being framed by its opening statements which then have been read as constraining the meaning of what follows. Each preface sets out the way the rest of the document is to be read. The preface is loaded up with authority through being framed as a separately authored piece. The author has high status and the piece written to guide readers to a single interpretation of what follows. This device is intended to prevent reading into the document meanings outside of the dominant discourse. The preface works to guide readers into a particular interpretation of the rest of the document and prevent contested readings. The policy process generally is operating like this throughout the text, co-opting political and cultural agendas to justify this economic end.

8.4.2 Step V: Prevalence of Discourses Over Time

Wodak's approach suggested that texts should be examined over time to place them in an historical context. With these texts, this process allows us to see if the use of discourses developed within the policy process over the ten-year period.

There was evidence that the discourses about the transformational powers of ICT that were adopted developed to respond to a changing situation in schools. At the beginning of the period, the discourse emphasised the link between the presence of ICT in schools and success. The discourse was able to present the lack of any overwhelmingly successful impact on the primitiveness of the technology, the skills deficit of teachers and failures of school organisation and management structures to support its introduction. As the reforms continued greater stress was placed on the success of small-scale research projects showing innovations working. This was linked to an emphasis on the potential of the rapidly improving technology and the fact of its increased presence in schools; however, the discourse of the deficit in teacher skills remained throughout this period.

Indeed, the increased stress on the need to train and up-skill teachers meant that texts which had at first seemed to suggest that ICT alone could and would transform schools was subtly developing. Over the decade the presence of ICT is largely recognised as being successfully established in many schools. The emphasis on getting the ICT into schools is therefore less prevalent in the later texts than the

earlier ones. However the discourses don't change. Instead of now identifying the lack of ICT in schools as being an impediment to producing the knowledge workers required for the Global Information Society of the discourse, the skills deficit of teachers and the disengagement of pupils become more prevalent topics. Later texts suggested that whilst ICT's powers to transform education was undiminished, it was now recognised that teaching needed to be good if ICT was to be able to deliver its promised potential. Despite this slight change in focus, from placing ICTs into schools to the training needs of teachers and the engagement of pupils, the same focus on techno-economic ends remained.

Thus there was a shift from an emphasis on placing ICT into schools to one that made the role of the teacher more explicitly important throughout the decade under examination. The documents made generally fewer statements about the quality of the ICT in schools and more about the teachers using them. The training needs of teachers were first discussed in terms that emphasised their technical inability to use ICT. As the presence of ICT grew, the discourse shifted to improving rather than providing users' skills.

Wodak's approach then did reveal the dynamic nature of the discourses involved in the policy to introduce ICT into English Secondary schools although that dynamic registered relatively modest change. For example, in the document, 'Preparing for the Information Age' (DfEE 1997b) teachers are positioned primarily as not being able to use ICT and requiring training. The discourse is that of the techno-economic and, being from 1997, the presence of ICT in schools was not yet fully established. Examples include claims that teachers are not ICT literate (p8-10), have 'much to learn about ICT' (p31), need to 'develop web sites' (p43) and have the potential to improve their technological aptitude (p44). There are also discussions about the poor level of ICT training for teachers up to that date (p61, 85) and of the need for ICT to somehow be integrated with teaching. Much of the document registers the poor ICT access in schools at the time, relating the teacher deficit to poor ICT facilities. The familiar techno-economic discourses are presented as ends, but the context in this early document is one where ICTs are not well established in schools.

By the time of the 'Harnessing the Future' document (DfES 2005) this discourse of

deficit remains a key element of what has been identified as the dominant techno-economic discourse, but the context has shifted from one where ICT provision is poor to one where there is now a much bigger presence of ICT in schools. So the discourse is still about the teachers having the 'potential to improve' (p2) and of ICT still looking for 'good teachers' (p10) and that teachers 'need training' (p47, 48). But the failings of ICT in terms of accessibility and reliability, plays a much smaller role in the document. The discourse has as its main subject the teachers rather than the technologies themselves, a shift in emphasis that reflects the difference that time has made on what the discourse chooses to discuss.

In 1997 the discourse emphasises ICT's lack of presence in schools (e.g. by invoking the idea of a 'Digital divide', NCET 1997 p10) and argues for the potential benefits to education (NCET 1997, p14) and to society generally by increasing the presence of ICT. This discourse is about emphasising the need for ICT in general, idealised terms, as being an agent of economic transformation. In 2005, the discourse associated with 'ICT Generally' remains one of unfulfilled potential, of the unused, potential benefits that ICT promises, but the blame is now not on a weak presence and underdeveloped technology but now the attitude and skills of teachers. Again, this reflects a stable discourse over time but one that is agile in its ability to move its focus without compromising itself. These new discourse strands are more detailed, giving examples of specific educational benefits that ICT can bring about. They are inclusive of broader issues than just the presence and absence of ICT, which was the main focus of the earlier discourse. But the discourses are those found in the literature relating to the Information Society, the Knowledge Economy and Globalisation and the central place of ICTs in this economic vision, as identified in the earlier section.

As the things discussed by the discourse change over time, the discourse is able to co-opt topics that might not have been thought to be part of the discourse. So the later discourse can be read as taking for granted the presence of ICT, where this was not the case in the earlier documents. By the time of the later documents, its presence in schools has effectively been naturalised and accepted. The later documents therefore discuss more than just getting the ICT into schools.

In 'Harnessing Technology: Transforming Learning and Children's Services' (DfES 2005), for example, there are references to ICT's potential impact on 'personalised learning' (p3), 'motivation' (p8), 'flexibility' (p11), 'citizenship' (p18-21) and 'improving standards' (p44-49). However, these things are only discussed in relation to the dominant techno-economic agenda. They are examples of how the discourse is more honed to different specific targets, which were not part of the earlier texts. These look as if political concerns have been incorporated into the policy process, although again, these are co-opted agendas of the desired economic ends.

The discourse remains one that discusses ICT generally in schools as a potential good, never a fully realised one, therefore continuing the deficit logic that runs consistently through the many discourses in the document text over the period studied. So even in this late document 'Harnessing Technology: Transforming Learning and Children's Services' (DfES 2005) there are plenty of references to services needing to be improved (p6, 7), of 'patchy progress' being made (p12), of use of ICT in schools being still 'too varied' (p13). There is even the occasional reference to the unevenness of ICT's presence (p12), although these are minimal compared to the earliest documents from this sample. This shows that the economic preoccupation that dominates the ICT policy process has remained consistent but that over time there has been a shift in the focus of the discourse, reflecting some success in establishing the presence of ICT in schools and a continuing recognition of lack of wholesale impact on schools.

8.5 CONCLUSIONS

The CDA presented in this chapter was used to develop an understanding of the policy discourses at work in the first phase of the New Labour administration's introduction of ICT into English Secondary schools. The contribution of Bell to this CDA has been to show how the economic discourse co-opts other competing discourses. In doing this a new picture emerges where what might appear to be different, competing values and agendas are in fact all co-opted to economic ends.

This contributes to the existing understanding that the techno-economic discourse is

dominant in the policy process by showing how this dominance is established. What the thesis has revealed is that economic ends are used to govern the use of all discourses in the documents. The language of political values and the subjects usually supervised by these values (such as 'personalisation', 'participation', 'digital divide', 'equality', and so forth) have been used to progress economic, not political, ends. Political values of social justice are not available within the documents even when the language is that of the 'disenfranchised learner'; here, for example, the key issue is rather the efficiency of a future work force. The vocational need to up-skill and transform is the actual reason for saying that there is a need to bridge the digital divide. Inclusion is about inclusion into the global economy; other values are subordinate to this in the discourse.

Similarly, what seem to be key educational ends are really not educational at all, but economic. Developing good teaching and learning, the development of educational software, meeting the training needs of teachers and the learning needs of pupils are all positioned as ways to achieve economic ends. The discourse consistently focuses on the lack of teacher skills regarding ICT, which has been described here as a deficit discourse. This has its own logic, which helps the economic focus to remain dominant. As explained earlier, the discourse strand of teacher deficit regarding their ICT skills is linked throughout to discourse strands about the Knowledge Economy, the Information Society and Globalisation. Undermining the professional status of teachers through disparaging their knowledge of ICT gives a reason for further training and further discussions about shortcomings of educationalists. In turn this justifies why ICT can't realise its potential, shortcutting any evidence that might show that ICT isn't having the desired impact. Statements about professional development and training become exclusively about teaching and learning in relation to ICT as understood in the discourse, thereby displacing and excluding other ends. Statements about schools, management and parents are also about making these fit for economic ends, although they use the language of politics and culture to hide this fact. What all this draws attention to is the repositioning of ICT so that people are presented as failing it rather than it failing people.

Although the application of Wodak's idea of tracking changes over time revealed that there were changes in emphasis in the use of discourses across this period, the

dominance of the techno-economic discourse remains in place. In the later documents there is little to show that the *values* of the cultural realm and of education in particular are guiding the reform process. The focus tends to be on the requirement of up-skilling teachers rather than establishing the presence of ICT, but despite this change of explicit focus the economic agenda remains stable and dominant.

The increasing emphasis in later documents on the training needs of teachers can be seen as part of an attempt to make sure the failure of ICT to bring about promised transformations is blamed on the attitude and abilities of teachers. What sustains the continuing and increasing investment in ICT in education is the focus on the economic ends the discourse references throughout. Sustaining this investment is the creation of a massive market based around the equipping of schools and the training of teachers to use the tools. Claims about *educational* values are in this way removed from the policy process even though the language of those values is co-opted.

The CDA has therefore done more than merely confirm the existence of a techno-reform discourse that has economic ends. It has shown how this discourse has maintained its position of dominance, by using the language, concerns and values of other realms. Political and cultural values are removed by being made to work for economic ends. It is sometimes possible to see explicit statements that seem to be about cultural values segue into what they are really about. So for example in 'Transforming the Way we Learn' (DfES/NGfL 2002) there is a statement about how ICT can make '*pupils creative and proud*' but which continues in terms of how they will be '*skilled up for the Knowledge Economy*' (p10). More often the explicit economic end is discretely hidden, however, so that all that is on show are references that in other contexts would be about cultural or political ends.

The chapter has presented the results of a CDA. Largely based on an approach developed by Banister, it added further steps to incorporate a reading of the text through the lens of Bell's tripartite theory of separate realms and their axial principles. As a result of the CDA it has been possible to start to answer RQ3: *What concepts can be used to explain the influence of the policies? Are these Educational*

concepts? If not, does this make a difference?

The concepts that shape these policies are economic. This is explicit in several of the documents analysed. The document 'Harnessing Technology' emphasises the economic link between ICT and 21st employment and business. *'ICT infused throughout the curriculum at all levels of education, will give us school leavers and graduates better equipped with the skills needed for 21st century employment. New partnerships will give employees easy access to online learning where and when they need it, which can be especially valuable to the small business. Industry can more easily connect to the research base through virtual science parks, not restricted to location, but focused around interest and need. Private companies have long used technology to modernise their training methods. The public sector can learn from their experience'* (DfES 2005, p11).

ICT is given an important role in bringing about a transformation in the relationship between education and employers. *'Technology also allows a new relationship between education and employers. School leavers will have an electronic portfolio showing their achievements and their best work – giving a clearer insight into what they can do in the workplace'* DfES 2005, p11). In this the discourse of the new economic context is given a central role as is the role of the link between ICT and a transformed future which, somehow, is already present; we read that *'[t]he future we describe is already happening in the most go-ahead places'* (DfES 2005, p11) and *'[w]ithin some institutions the future... is already happening'* (DfES 2005, p12).

The idea of investment in ICT is presented as a proxy for school excellence in itself, which results in the idea that professionalism and educational excellence follow from investment in ICT infrastructures: so we read statements such as *'...For schools its introduction, managed strategically, can create a very different atmosphere of learner-orientated innovation'* (DfES 2005, p38), implying both that 'learner-orientated' learning was absent in schools without ICT and that the introduction of ICT automatically fixed this deficit.

The economic imperative is also found in the way the documents emphasise the establishment and growth of an ICT industry to support the investments in schools,

emphasising 'best value' and 'value for money'. So for example, we read lines such as *'We are developing a best value scheme for ICT infrastructure and services for schools in the first instance, working with the ICT industry... We will be asking all institutions to adopt the scheme or to demonstrate they are delivering equivalent or better value for money through these approaches'* (DfES 2005, p40). We further read that, *'...this means working with the ICT industry... to agree a common systems framework...'* (DfES 2005, p40). That ICT in schools is intended to support business interests is also embedded in this discourse, for example when we read that *'Our main focus will be to support the Skills strategy and the 14-19 Strategy, including vocational routes... to meet the needs of learners and employees, especially those in small businesses'* (DfES 2005, p48).

Industry and business are given a key role in the ICT discourse: for example we find this being made explicit when we read *'We are already reviewing the current relationships with ICT industry partners to bring about a step change in our relationship with industry. We want the industry – both infrastructure and digital content organisations – to be more than just suppliers. We want them to have a voice in our future plans at all levels'* (DfES 2005, p63). Industry's dominant role is emphasised when we read that *'...Industry members will be represented... in the work on learner support, learning activities and content, workforce development and infrastructure'* (DfES 2005, p64).

The economic focus is also made explicit in terms of building and promoting ICT industries as part of the policy, as when we read of the aim to make *'...Britain a centre of excellence in the development of networked software content, and a world leader in the export of learning services'* (DfES 2002, p7). That the discourse is economic is clearly signalled when we read that, for example, the National Grid for Learning was justified in terms of its economic impact: *'Tony Blair, launched 'Open for Learning, Open for Business', the strategy that has underpinned the successful roll-out of the National Grid for Learning Programme'* (DfES 2002, p3). Use of Wodak's chronological analysis has shown that documents produced latterly are focused more on matters other than *establishing* ICT in schools, but this shift of emphasis is used to maintain the dominance of the techno-economic discourse; it does not undermine it.

The process of critical reflection, using the methods described above, on the original descriptive discourses, enabled me to identify six critical discourses that underlay the original ones. What emerged from my analysis were the discourses labelled respectively Globalisation, Political Prophecy, Knowledge Economy Society, Managerialism, Marketisation and Technology as a 'Magic Bullet'. By identifying these six discourses it is clear that all the discourses forming the introduction of ICT into English secondary schools were techno-economic.

The discourse of Globalisation has been used to produce a specific sense of the economic context in which schooling, and these particular policies, are placed. As used as a discourse, Globalisation produces a competitive understanding of the place of English schools and their aims and objectives. The rest of the world is positioned in this discourse more as a threat to indigenous markets than an opportunity to expand. It is in this context, of the threat of the foreign, that the need for schools to modernize and keep in step with an increasingly techno-sophisticated economy is stressed. This discourse therefore takes a very narrow view of Globalisation, one that is able to emphasise the central role of ICT, of its futuristic modernity as well as its unlimited potential for transformation.

This is explicit in the forward to one of the analysed documents where we read of the desire of the government to *'...unlock the value that information and communications technologies (ICT) can undoubtedly bring to education... where there are considerable gains to be made... for... the future prosperity of the nation'* (DfES 2003, p1). The use of the word 'undoubtedly' in this is indicative of how these discourses have been introduced. In this same early document we read of how investing in ICT in schools will *'...make the UK a world leader in the development, deployment, use and export of digital learning services'* (DfES 2003, p4). In this it is the discourse made familiar in popularist works such as Friedman's 'The World Is Flat' (Friedman, 2005) thesis. As an example of this, we read that *'To participate fully in the knowledge economy, in which ICT will not only be integral to learning and the workplace, but increasingly to a growing range of leisure activities too'* (DfES 2002, p12). In the 'Connecting Schools' document we read that *'Pupils in these schools often achieve more in terms of standard attainment measures while developing skills that equip them to embrace the knowledge economy'* (Becta 2002, p12). What these

kinds of statement achieve is to co-opt items usually associated with other principles and values and position them so that schools are positioned as being vital institutions for the survival of 'home' economies. As an example of this the then Prime Minister Tony Blair is approvingly quoted in the 'Transforming the Way We Learn' document as an example of this discourse saying '*...[digital technologies] have the potential to improve achievement in our schools and colleges, to boost the prospects of British industry and commerce*' (DfES 2002, p6).

And it is noteworthy that 'transformation' is a key word in the discourse, linking it both to the response to Globalisation and as part of the next discourse, that of 'political prophecy'. So, for example, we read of the policy being the '*...beginning of an ongoing transformation that over time will deliver exciting new opportunities...*' (DfES 2002, p7) and again '*...the beginning of an ongoing transformation that over time will deliver exciting new opportunities...*' (DfES 2002, p45). It is a discourse that is a backdrop informing the other discourses. For example, it links with the discourse of 'political prophecy' where a technology-dominated future is predicted where deficits in the level of techno-sophistication have dire consequences.

The Political Prophecy discourse is labeled to capture the quasi-faith agenda embedded in the policy discourse. This is explicit in statements where we read '*It seems to us a matter of common sense that the educational process in our country will gain massively as a result of using ICT wisely. If this proposition cannot be entirely proved, it has to be an act of faith. It is important that Government makes this act of faith and that we use technology rather than study it over the next decade*' (NCET 1997, p15), which is followed by '*At the risk of sounding a little theological...*' (NCET 1997, p15) and other statements like '*In our view there is no substitute for Government taking what we describe as a "common sense act of faith" view of the need to ensure a co-ordinated approach to the application of ICT in schools*' (NCET 1997, p14) to emphasise the quasi-religiosity of this aspect of the discourse. The approach to ICT in schools and the obvious benefits this will bring are characterised as being as obvious as the benefits of the invention of electricity, a view explicitly suggested where, for example, we read, '*as ... partly based ... on our collective best judgment and on a common-sense act of faith – analogous... to realising in the aftermath of its invention that electricity would be applied across all aspects of*

society. Our recommendation to Central Government is that they must make the act of faith and encourage the education sector to start using technology rather than talking about it (NCET 1997, p6). It is also linked to the transformational agenda of the Globalisation discourse.

Transformation is a key word throughout the discourses where it appears as part of the title of the document 'Fulfilling the Potential. Transforming Teaching and Learning Through ICT in Schools' (DfES 2003). The preface of that same document uses the word 'transformation' three times and continually the discourse emphasises how ICT has the potential to transform schools and education generally, as when we read, *'The massive improvements we have seen in the basic ICT-enabled infrastructure for learning now need to be paralleled by a transformation in the use of ICT'* (DfES 2003, p6).

ICT is presented in such a way that it is a potential solution even for problems arising because of ICT, such as issues of digital divide inequalities. The power of this discourse is seen in the way it survives even in documents that show that ICT has not made the impact on schools that the prophecy discourse predicts. These failures are absorbed by the discourse itself and are reproduced as evidence of greater efforts being needed to ensure that ICT's potential is fulfilled. The use of the word 'potential' is a key to this discourse. Because it relentlessly pushes focus onto the future it avoids engagement with any aspects of the present or past that might disrupt the discourse. It is unfalsifiable, in the sense of being unscientific: anything that might count as evidence against it is reinterpreted as evidence for it. The 'prophecy' dimension of this discourse captures this. It is a discourse that positions a specific future as inevitable. In so doing it also implies that preparation and accommodation of this inevitability are the most reasonable courses of action.

The Knowledge Economy discourse is presented as something defining the present and the future. Knowledge is emphasised as the new capital of modernity and this is then connected to the technology in a way that positions the connection as unproblematic and natural. For example, the document with 'transformation' in its title, 'Transforming the Way We Learn' has a section which explicitly links the ICT into Secondary schools initiative to the 'knowledge economy', a section that explicitly

links having *'...high-level learning, thinking and reasoning skills such as conceptualisation and problem-solving'* (DfES 2002, p12) to the knowledge economy. The point of ICT is to enable students *'[T]o participate fully in the knowledge economy, in which ICT will not only be integral to learning and the workplace, but increasingly to a growing range of leisure activities too...'* (DfES 2002, p12). As with other discourses, this makes use of a sociological and economic literature that has grown out of theorizing post-industrialism and modernity, building on works by Webster, Kumar and Coyle. However, what is meant by the term 'knowledge economy' and 'information society' is vague and under-defined, avoiding contestation yet distinguishing the new phase of modernity from what went before.

But these terms are useful in that they are short-hand for transformation and progress, which is how 'information age' (a variant of the 'knowledge economy/information age' terms) is used in the 'Fulfilling the Potential' document: *'...my vision is one where schools are confidently, successfully and routinely exploiting ICT alongside other transformational measures. By doing so they will be delivering an education that equips learners for life in the Information Age of the 21st century'* (DfES 2003, p3). The discourse has been identified with Bell's theoretical construct of the Information Society. Knowledge and information are identified as the new capital (hence Coyle naming it a 'weightless' economy). This links with the political prophecy discourse, specifying what the inevitable future will be. It creates links between knowledge and ICT, giving ICT the status of being the 'defining technology' of the age. The unanalysed nature of what knowledge and information means in this context, and exactly how this relationship between the technology and knowledge is supposed to work, protects the assumed link from challenge.

The discourse of Managerialism echoes elements that Ball (2008) identified as key foci of the general policy discourse. Throughout the discourse there are continual recommendations to managers about the systematic management required to ensure the control of ICT is systematic and consistent with managerialist approaches to institutions generally. This includes recommendations of management tools to ensure a consistent and standardised approach. For example, in 'Transforming the Way We Learn' document we read of a package called *"Total cost of ownership" ...a management tool that considers the broader cost implications to an organisation of*

investment in ICT, including staffing costs, capital costs, maintenance costs, support costs and recurrent spend' (DfES 2002, p24). The hyper-management orientation embedded in the policies is linked explicitly with 'teacher blaming'. So throughout there is a massive emphasis on the need for teachers to be trained to use the ICT effectively, which reinforces the idea that their skills are currently defective. Typically, as in the 'Harnessing technology' document analysed, the discourse recommends that *'...our teaching institutions ought to be advancing beyond the traditional formats that are still so prevalent'* (DfES 2005, p27). This achieves a specific end: it is used to establish an unchallenged hegemony about belief in ICT, rather than blaming teachers as an end in itself. It links in obvious ways with the 'discourse of derision' that Ball identifies, but here serves a particular end within a specific policy. It connects with the political prophecy discourse, which insists on a predictable futurism based on the use of ICT to transform schools. Current failures of ICT are explained away by combining a suitable target group (teachers) with an approach to management that is promised to address this group's failures. ICT is therefore protected by treating teachers as scapegoats.

This is usually presented in turns of systematic provision of training to eradicate teacher deficiencies, as for example where we read that *'both initial and in-service training need to take fully into account the need for confidence and competence in the application of ICT in schools. For example, the 20 to 30 hours typically spent on ICT during initial teacher training courses at the moment is less than half the amount of time that teachers actually need to become truly proficient'* (NCET 1997, p7).

The default position throughout is to claim a skills deficit in teachers, an assumption often subtly implied as an accepted wisdom rather than explicitly stated as, for example, when we read that *"The overall stated aim was to 'equip teachers with the necessary knowledge, skills and understanding to make sound decisions about when, when not and how to use ICT effectively in teaching particular subjects'"* (Ofsted 2004, p28) which clearly implies that teachers did not have these 'necessary' competencies. Its potential for transformation is unchallenged by failures of the past and the present because teachers are positioned as requiring change before ICT's potential can be realised. This position is secured by a tough managerialist discourse. Marketisation as a Business is obviously linked with the previous

discourses. However, it remains distinct in that it goes further than just saying that schools have a role to play in the Global economic reality, or that they will be affected by the political prophecy discourse and the Managerialist discourses respectively. This discourse creates the understanding that schools are business institutions themselves. So in the 'Harnessing Technology' document we read that *'collaboration with industry is not tied to location'* (DfES 2005, p6) and that the implementation of ICT in schools *'allows a new relationship between education and employers and the private sector'* (DfES 2005, p10) It emphasises an input-output model of schools and positions learning exclusively in terms of what the economy needs. This is explicit when, for example, the Ofsted document writes that *'Using ICT was contributing positively to the ...Economic well-being of pupils and students'* (Ofsted 2009, p6). It also insists that schools understand their successes and failures in terms of targets and efficiency directly imported from business.

Although marketisation is not specific to ICT policy, the understanding of ICT's role in schools is reproduced in terms of the greater efficiencies the technology will bring about. Distinctions between the various functionalities of ICT in schools (for example, ICT in learning and ICT in administration) are not made in this discourse. Both learning and administrative tasks are discussed in terms of business efficiency, following an input-output logic. This discourse makes literal the link between market and schools that was once merely a metaphor.

The role of business and leading businessmen in framing the policies and realising the vision introducing ICT into schools is explicitly acknowledged. In an Appendix to the 'Independent Inquiry' document we read the then Prime Minister Tony Blair spelling out this: *'Last year, I approached Dennis Stevenson, a leading businessman and Chairman of the Trustees of the Tate Gallery, to ask his advice about how we could realise the vision I set out at Labour Party conference. He has made a thorough analysis of the issue and has suggested that the subject needs to be addressed via a thorough appraisal by independent experts in related fields, brought together to establish a strategy for action. I am therefore pleased to announce therefore that David Blunkett and I are establishing, under Dennis Stevenson's chairmanship, an expert panel of teachers, business people, financiers and educationalists to report to us on the options for development of our vision'* (NCET

1997, p35). It mobilises the other discourses in the policy, especially the Globalisation discourse, where economic imperatives are framed by deficiencies in the necessary skill sets for employment and the consequential need to produce a more efficient school system. This is the discourse of messages such as *'We have concluded that if the next government does not take steps to intensify the use of information and communications technology (ICT) in our schools, a generation of children - and a generation of adults as teachers - will have been put at enormous disadvantage with consequences for the UK that will be difficult to reverse'* (NCET 1997, p4). These discourses are used to align the identity of schooling with modern business practices. In discussions of educational purpose this view is usually tempered by recognition of the existence of other values, although these are kept marginal to ensure that schools operate like businesses. The high level of financial input necessitated by the ICT policy and the stress on partnerships with business providers for ICT also supplements this discourse.

The discourse of 'Technology as a Magic Bullet' is the discourse of potential, emphasising the future promise of the political prophecy. Those whom Larry Cuban (2001) calls the 'techno-enthusiasts' or 'techno-reformers' all embody this discourse, which positions ICT as a technology of unlimited transformational power. In its extreme form, the technology is presented in such a way that its very presence will transform schools and education; human agency is conspicuously absent. This discourse creates the impression technology is an unlimited good, by defining it as a solution to problems in education and schools, as when we read that *'Traditional methods have not achieved enough. The wider availability of new technology means that we have both the opportunity – and the responsibility – to explore new approaches to teaching and learning'* (DfES 2005, p27) and a belief in *'... results emerging on both sides of the Atlantic showing the improvement brought about by ICT on post school careers, on school learning and, indeed, on school administration as well as the evidence of the sometimes startling help that it can bring to children with severe disabilities'* (NCET 1997, p6). Consequentially, it tends to produce deficit accounts of schools and education; in which problems are highlighted that ICT can solve, in order to gain traction.

Interestingly, this internal logic makes identifying problems extremely important, in order to justify increased spending on ICT. So typically we find documents arguing for continued and even increased investment in ICT in order to rectify the unfulfilled potential of schools, which is what we read for example in the following: *'While some schools are already pioneering applications of ICT for both curricular and non-curricular purposes and others are designed and built with this in mind from the start, these efforts need to be replicated elsewhere to eliminate the wide variations in the quality and diversity of practice that still exist, both within and between schools'* (DfES 2003, p8). The circularity of this is obviously not attended to in the discourse, however. In this regard, it echoes the issues Ball identifies with the use of the discourse of derision as a motive within policy initiatives more widely. The discourse of derision produces justifications for new policies; perversely, achieved success would threaten this discourse and the policies it generates. This is a discourse that seems to create a constant crisis.

The next chapter presents the findings from the document analysis for the second case study (2006-2010).

CHAPTER 9:

RESULTS OF THE POLICY ANALYSIS:

PART II

9.1 INTRODUCTION

As with the first case study, this chapter presents findings from an analysis of policy, this time for the remaining five years of the New Labour administration. Again, the chapter follows the two-stage approach. Part 1a presents the key actors, and part 1b presents the documents selected. Part 2a will present the results of the CDA and part 2b will present the additional two steps undertaken to identify absences and tensions between cultural realms and over time.

By applying CDA to a second phase of policy documents used by teachers in the introduction of ICT into their Secondary schools, the thesis contrasts recent policy work with that of the preceding decade. The case study focuses on whether there is continuity or change since the previous study. In doing this the chapter continues to answer RQ3: *What concepts can be used to explain the influence of the policies? Are these Educational concepts? If not, does this make a difference?*

9.2 RESEARCH METHODS

9.2.1 Data Gathering

Part 1a: Key Actors Selection

This study involved the same informants as the first policy analysis. These informants' nominated documents for analysis drawn from the period 2006-2010, a period in which policy treated ICT as present in schools but still problematic. This consistency of informants was necessary to enable a comparison to be drawn with the first case study (see Table 7.1. chapter 7).

The key actors were requested to produce a list of the documents they considered to have the most influence on practice regarding the use of ICTs in relevant years (2006-2010). Responses to this request produced a list of policy documents.

Part 1b: Document Sample Selection

The nominated documents were reviewed with references to the criteria described in chapter seven, section 7.5.1 (Table 7.2: Reference Criteria for the Selection of Documents).

The rationale for the first criteria, 'documents must focus specifically on the use of ICTs in education between the years of 2006-2010', is that the first case study covered the period up to the end of 2005. Out of the core list produced by the actors only those documents that met all the criteria were included in the analysis.

9.2.2 Data Analysis

As with the first case study the next stage of the research involved the selected texts being analysed using a version of critical discourse analysis outlined in Table 7.3 in chapter seven. Once this has been achieved the analysis will then move to Part 2b, which will attempt to examine the documents over time and through the lens of Bells' axial principles. Table 6.4 in chapter six outlines the final two steps in this analysis.

9.3 RESEARCH FINDINGS: POLICY PROCESS

9.3.1 Actors

The key actors were the same sample of people used in the first case study as this allowed consistency between the two case studies.

9.3.2 Documents Selected

Part 1b of the research approach was to establish the list of documents to be analysed. All documents that were nominated by the key actors can be found in Appendix II. Below are the documents selected according to the criteria described above.

Table 9.1: Short Listed Educational ICT Documents Included in this Research

Year	Title of Document	Organisation
2006	Making the Most of your Investment in ICT	Becta
2007	ICT and Building Schools for the Future: An Essential Guide	Becta
2008	ICT Mark. A Guide for School Leaders	Becta
2009	The Impact of ICT	Association of School and College Leaders (ASCL)
2009	The Importance of ICT. Information and Communication Technology in Primary and Secondary Schools, 2005/2008	Office for Standards in Education (Ofsted)
2010	Safeguarding in a Digital World. Guidance for Curriculum Managers, Teachers and Training Staff	Becta

As with the first study, while not all documents in the selection are conventional 'policy' documents, the way they were chosen by the actors makes them part of the policy process nevertheless. The inclusion therefore of an Ofsted report, for example, that was being used by teachers putting ICT into their school, had as much relevance to the policy of introducing ICT into English Secondary schools as a document explicitly labelled a policy document.

9.4 POLICY ANALYSIS

Having establishing a list of documents to analyse, Part 2a began by following the procedure established in chapter seven, section 7.5, Table 7.3.

9.4.1 Step A: Description of Text

The texts are six Educational ICT documents aimed at English Secondary schools. The texts were analysed together, as in the first case study. The texts in this study were produced by only three agencies: Becta, NCSL and Ofsted. These organisations were all official government agencies. It is immediately apparent that

there was less variety in what the actors presented for this second case study. This indicated a possible narrowing of focus as if the actors were being much more specific in what they wanted to achieve through the policy and more specific in the kind of interests they had around ICT and schools.

9.4.2 Step B: Free Association to the Text

The free association for this second case study reflected the initial impression of a narrowing of focus. This may have been due to a growing centralisation of policy. Yet there was not only a narrowing but also a shift in the kind of associations being made in this initial phase of the study. The text seemed to be more about capital funding, value for money, self review, procurement, infrastructure, learning platforms, accreditation, effectiveness and efficiency, reputation, recruitment, school improvement, process, infrastructure, affordability, sustainability, safeguarding, reducing risk, risk management, ICT's role in amplifying risk, and the established presence of ICT, than in the first case study. Yet there was also the reiterated subject matter of the continued failure of schools to use ICT to communicate to parents, use Web 2.0 in lessons, of the need for teachers to be further supported in using ICT in learning if they were to be successful, of the poor use of ICT for assessment and data logging, communicating with parents and of the continued need for better school leadership for ICT. There was also an identification of a gender divide in Secondary schools where boys were taking up formal ICT lessons in much greater numbers than girls, of poor results in specific ICT courses and the failure of statutory provision for KS4 for those not sitting a specific ICT course. Weak teaching was also still criticised, with only small-scale projects cited as innovative and few outstanding examples of lessons, despite substantial investment in ICT.

Freely associating ideas in the texts suggested that the concerns of this period of ICT in Secondary schools were about managing the presence of ICT without losing focus on the need for the ICT market. What was lost was a considerable rhetorical enthusiasm for the potential of ICT. There was a less idealistic approach to ICT in schools and a new sense of grittiness. Rather than inviting a new world of opportunities, the focus was more on problems in practice, and horizons seemed curtailed. New problems were introduced that hadn't been highlighted before. Safeguarding and value for money seemed to be key concerns, suggesting a shift

from the emphasis on the promise of innovation and transformation to controlling and managing a newly ubiquitous technology. The new concerns included the need to contain risks, both financial (discussed in terms of 'value for money') and 'duty of care' issues specific to ICT.

9.4.3 Step C: Systematically Itemised Objects, Step D: How the Objects are Spoken about, Step E: Systematically Itemised Subjects and Step F: Reconstructing the Differential Rights to Speak

These four steps were completed together. The items and objects identified by the analysis are listed below:

1. Teachers
2. Pupils
3. School leadership – Head/Leadership/Governors
4. Parents
5. Schools
6. ICT
7. Government
8. Business

The list is reduced compared to the first case study. From the start this suggests a shift has happened. Given that the documents are aimed at secondary school staff involved in ICT the first six objects/people are unsurprising. However, the lack of reference to the role of technicians is something that reflects the change in emphasis and perhaps recognition that by the time these documents were produced the presence of ICT had largely been established in the schools.

Teachers are presented as needing support and further development, the reason offered is that ICT does not yet have the impact in schools it is presented as having outside of school. Typical of this approach is the comment, *'Teachers and lecturers will need support and development to make the most of this agenda'* (ACSL 2009, p5), where after a list of the potential uses of ICT in schools (e.g. peer review, breaking down the boundaries between formal and informal learning, respect for ICT, assessment) teachers are then introduced. The texts emphasise the large number of potential uses in order to mobilise the idea that teachers will need support and also

to emphasise the idea that it is unlikely that teachers will ever be fully conversant with all these potential uses of ICT. In 'The Importance of ICT. Information and Communication Technology in Primary and Secondary Schools' teachers were discussed in terms of their 'deficiencies' (Ofsted 2009, p20) and 'common weaknesses...' (p21), such as poor use of ICT for assessment (p29); when the context was positive the emphasis tended to be about the good provision of resources that were then used 'generally' well by teachers.

An exception to this is the use of exemplars of good practice, as on page 35 of the Ofsted document, where a single school is taken as providing a rare example of success: *'A few of the schools visited had made 'using ICT' the centre piece of their curriculum development work – with striking outcomes, as in this example'* (Ofsted 2009, p35). What follows is a block of highlighted text, which presents the case study. It is immediately followed, however, by what can be read as a disclaimer, *'... however... the picture this survey establishes is one of patchy provision and inconsistent progress'* (Ofsted 2009, p35).

Similarly, the role of teachers with the role of ICT coordinator is discussed in terms of the inexperience of teachers and the schools failing to allocate sufficient time for them to assure quality of provision and organise moderation of assessment (Ofsted 2009, p16). Positive case studies again emphasise how few such cases there were and how there needed to be better support. Teachers were criticised for teaching software packages rather than transferable skills (Ofsted 2009, p4), for over-directing students (Ofsted 2009, p31), being restricted in their access to ICT (Ofsted 2009, p22), and for the restricted success of ICT due to only individual teachers being enthusiastic and interested in ICT rather than there being an institutional coordination of ICT use (Ofsted 2009, p17).

In the Building Schools for the Future (BSF) document the term 'teaching staff' is used only once and there is no reference to teachers in the document. In the guide to the ICT Mark document the term 'teacher' is totally absent. Pupils are discussed in terms of showing ICT's role in reengaging disaffected pupils and of the sharing learning aims and progress with them. Personalised learning and assessment are the two headings under which they are explicitly referred to in the document 'Making

the Most of your Investment in ICT' (Becta 2007, p11-12). The link between pupils and '*an environment fit for the 21st century*' is made explicitly in the BSF document (Becta 2007, p2). Interestingly there is no mention of pupils in the safeguarding document (Becta 2010). Pupils were also briefly mentioned in relation to the encouragement they received in using a range of ICT devices.

However, pupils tend to be excluded voices. The discourse claims pupils are part of a discourse of teacher inadequacy, one that constructs the teaching profession as one not fully exploiting the potential of ICT in schools. This in turn is linked to the discourse of standards embedded in a managerialist approach to management and leadership of schools and resources where the solution to the teacher deficit is constructed in terms of better management.

Pupils are also discussed in relation to the economic context. The UK economy is described as requiring workers who are appropriately skilled and knowledgeable. Pupils are also recognised as having learned ICT skills and knowledge informally. However, this recognition is used to highlight the need for better teaching, the need to develop better systems of connectivity with these informal spaces and practices with a view to control these pupils' use of ICT and exploit their skills. Unexploited informal use of ICT is construed as being a waste, offending the managerialist emphasis of discussions of efficiency and maximising returns on resources.

School leadership/governors were discussed in the documents in terms of their role in coordinating whole school use of ICT. The documents gave them a leading role, which was still thought to be unrealised in many schools. One of the documents addresses itself to school leadership.

Parents were discussed in terms of exclusion, being used to make the argument that schools are not doing enough to forge communication with them. Tracking, monitoring and communicating pupil progress to parents was a focus, as was the role ICT played in raising the parent's esteem for the school. The role of parent engagement and visioning was also mentioned.

Schools are discussed in terms of capital, best value, purchasing, investment,

provision and partnership arrangements with ICT development. Schools are also constructed as part of a discourse of the future.

This construction associates schools with the idea of renewal over periods of time. They are also discussed in terms of their relationship to their investment in ICT. ICT is discussed as enhancing schools. Schools are represented as having successfully established an overwhelming presence of ICT. Schools are full of ICT and this is presented as of benefit to schools whilst at the same time bringing with it difficulties and challenges that are still to be faced. These challenges involve the limited uses made of the proliferation of ICT in schools. In particular schools are represented as not using ICT to communicate to parents, neither to enhance teaching and learning nor to assess pupils' progress.

Despite this, another strand of the discourse revolves around schools being removed from the need to manage the technical side of ICT so that they can focus on its application to improve teaching and learning. So although there is a stress in the documents selected in the case study towards managing investment, getting value for money and so forth, and a stress on the school leadership to ensure that this occurs, there is also a tacit recognition that expertise in the technical aspect of ICT provision, as opposed to its application as a teaching and learning resource, is at the very least difficult and at worst a 'burden' on schools (e.g. Becta 2006b, p2). This emphasis is discussed further in relation to the role of government.

ICT is discussed, as has been suggested above, as an established presence, both in schools and society generally. Emphasis is placed on the business opportunities afforded by this. This is presented in terms of competitive edge, of the need to ensure that investment in ICT continues in order to maintain competitive advantage. The emphasis is on the idea of permanent change, of continual renewal and upgrading in order to remain competitive. The commercial imperatives are emphasised when current and future trends are explicitly discussed. General ICT is therefore connected with governmental ideas of ensuring the success of the UK's economy, an idea supplemented by statistics about wealth '*... The digital economy accounts for around 8 per cent of national wealth...*' (Becta 2006b, p2), competitiveness '*... digital technology has helped the UK close the productivity gap*

on its leading European competitors' (Becta 2006b, p2), the threat of competition '*... France, the USA and a host of Asian countries will provide fierce competition*' (Becta 2006b, p2), the financial need to continually modernise and upgrade networks, sustaining the UK economy's ability to sustain creative industry and ensuring that access to digital services is available to all in order to sustain the UK's strong position.

In schools, ICT is linked to this agenda; the priorities set for schools are therefore those claimed for society generally. ICT is seen as an established presence in Secondary schools, and in these documents, concerns are about the way it is not being used enough rather than obstacles to its introduction. ICT is a large presence now in terms of teaching and learning, but is underused as a resource for communication with parents and assessment. Some technologies pupils use at home and in informal social space, specifically '*everyday Web 2.0 expertise...*' (Becta 2006b, p3), are not present in schools. Throughout discussions there is a sense that schools are not fostering the economic imperative of ICT expertise. As mentioned in the discussion about pupils, the idea given is that informal uses of ICT are not being exploited enough. This is framed in ways that ensure that this deficit is one that can be construed as a failure to ensure 'value for money'.

Alongside this is a concern for the safety aspect of ICT. 'Duty of care' issues have arisen and are discussed in terms of the established presence of ICT in schools and society generally. The attachment of risks to ICT use is positioned as being an area of crucial importance to those managing schools. Users of ICT are empowered to protect themselves but there is an implicit understanding that a school will be held responsible for any safeguarding issue. Institutions are expected to have procedures in place to manage safe guarding issues. ICT is presented as a potential danger to all at such a level that safeguarding procedures have to be put in place, even though at the same time it is also seen as bringing enormous benefits. The approach is couched in the language of managerialism, where checklists for action are presented along with sites for further information and support. ICT is presented as a complex of still underdeveloped, underused potential as well as a source of some risk within a context of managerialism and economic competitiveness.

Linked to this was discussion of software developed to help schools manage this risk. The link is thus made between the issue and a new area for increased technological innovation. ICT is being constructed as causing risks, which new ICT is expected to resolve. As identified earlier, the issue of ICT's value for money is a key area of discussion. It is the huge investment in schools that provides the context for requiring that schools and the country are getting a return on that investment. In the Ofsted document this is explicitly stated: *'governing bodies are expected to apply the four principles of best value in ensuring the school and the country gets value for money from this significant investment'* (Ofsted 2009, p33).

ICT is therefore placed in a context where the concern of 'financial procedures,' the 'principle of competition', and discussion of auditing and procurement then lead to discussions of how schools manage and choose the specific ICT required. Strategies and visions relating to ICT in schools were being recommended that focus on these complex issues. A connection was made between managers and leaders developing their strategies and visions in relation to the effective evaluation of implementation and impact. However, it was not spelled out what this actually meant beyond the claim that fully costed ICT development led to good quality teaching and learning in ICT. In particular the claim was made that success criteria in policy documentation could be fully costed, which made explicit the link between value for money and ICT educational outputs (e.g. Ofsted 2009, p39).

There was also some acknowledgement that ICT generally referred to more than just computers, and the creative use of digital technologies' potential was presented as a sample of good practice. A typical example of this is where in the Ofsted document we read: *'In secondary schools, students made the best use of ICT in communicating their ideas and presenting their work. Access to a wider range of software applications is now better; for example, students were increasingly using ICT for manipulating digital media, composing music and reviewing their performances in dance, drama and physical education. Where achievement was good, students were independent and creative, using ICT naturally to support their learning. They appreciated the importance of design, layout and the function of tools in analysing information and modelling real-world scenarios'* (e.g. Ofsted 2009, p18).

There was also discussion of explicit qualifications and courses for learning ICT, and a link between these courses in the pre-16 KS4 stage with the uptake of computing courses. There was also some discussion of a gender divide where girls were identified as lagging behind boys in interest, achievement and uptake in specific ICT courses. Poor results generally at KS4 and in 6th form courses were cited as a factor possibly deterring girls. This discussion was connected to vocational pathways after secondary education was completed and the whole discussion of the purpose of ICT courses in secondary schools referred to career opportunities throughout.

Government is explicitly mentioned in relation to the Secondary National Strategies, which was a programme designed to raise standards in Secondary schools and which included the use of ICT to do so. It was also explicitly mentioned as licensing 'e-skills UK', a not for profit employer led organisation. The aim of this organisation was, *'...to ensure that the UK has the skills it needs to compete in the global economy'* (Ofsted 2009, p39). It was also identified explicitly in relation to the requirement of schools to ensure that they produced an appropriately skilled workforce. The connection was made between the assessment of ICT and the economic well-being of the young people in school. In doing so the dropping of the 'communications' element, so ICT became IT again in this context, seems more significant when considered in the light of earlier comments. These identified the communicative element of ICT as being increasingly significant in successful uses of ICT in schools.

So we read: *'Getting assessment right is vital if standards in ICT are to improve. It is estimated that 77% of the workforce now use information technology (IT) in their job and the demand for such skills is likely to continue to increase. Schools must equip young people with the 21st century skills necessary to ensure their employability'* (Ofsted 2009, p30).

Earlier, these achievements were presented as involving the use of creative media and Web 2.0 applications. When discussing the success of vocational courses at KS4 in recruiting girls, communication skills are highlighted as being an important factor in this success and are therefore constructed as gendered: *'The heavy emphasis on tasks based on using ICT for communicating and presenting, aspects*

which are assessed entirely through coursework, has been an important factor in recruiting them' (Ofsted 2009, p32).

However, post 16 courses are discussed as being less attractive than the KS4 courses because they are thought to be less credible than competing courses, as noted by the Ofsted Report. Further, there was a passage which suggested that the skills used by students out of school, such as making their own videos, were not vital to the economic well-being of the UK, whereas manipulating data and programming taught in courses were. Criticism of vocational qualifications was in terms of them limiting higher-achieving students rather than being vocational (e.g. Ofsted 2009, p32).

Government is explicitly associated with extending the use of ICT in homes and business, in investing in school buildings and ICT, in developing large scale public/private partnerships and in removing the management of the technology from schools themselves and placing it in the hands of private partnership from the business community. Throughout the Becta documents the government voice emphasises the need for 'value for money' and there is a subtle haziness about how criteria for success in implementing ICT is tangled up with the economic imperative of this principle. The government voice is one of assurance that links innovation with effectiveness without making clear what this implies (e.g. Becta 2007, p2). This may be a function of Becta's difficult role, being a part of the government voice for promoting ICT in schools whilst also conducting research into the impact of ICT in Secondary schools and finding that its impact is less than overwhelmingly positive, as discussed earlier in the thesis.

When discussing the features of an ICT infrastructure that schools should develop for learners, educators and administrators, the government voice prefigures the findings of research with the overarching requirement that ICT provision is to achieve value for money. The emphasis on the economic imperative settles over the rest of the content in the documents, constraining understanding of what is meant by innovation and indeed by teaching and learning by tethering these to some idea of economic audit requiring tight financial management.

Connected to this is the very clear message that government is leading and directing the policy of putting ICT into schools. In particular the government is presented as the central agency directing the financial input into the initiative. Again, the government's rationale is also directed towards the global rather than local impact where the survival of the UK's competitive lead over international rivals is continually stressed. Throughout, the motivation is one of ensuring that schools are given the resources that will enable the UK to compete and by giving itself the responsibility of bankrolling the work the issue of responsible fiscal activity has also become foregrounded. 'Value for money' and 'how to get the most out of your investment' are key elements of the discourse and seem to reflect a Treasury rather than a DFE concern.

Within the case study the government voice is dominant. It stresses the economic auditing that is required and offers reminders that innovations must be always aware of cost constraints and value for money, which in turn tends to become the context for any discussion of innovation in terms of teaching and learning.

There is a continual stress on innovation and the revolutionary transformation of society that ICT promises to fulfil. This is linked directly throughout to the economic imperative of having a competitive skilled workforce fit for the twenty-first century. So there is enthusiastic discussion of Web 2.0 and social software, of context aware computing such as iPhone and Google's latitude service, of pervasive computing where computing stops being a desktop experience but rather becomes ubiquitous through identification, location, sensors or wireless technologies, for example. Combined with schools, these suggest teachers and learners begin to work in different ways, where learning is more about knowledge generation than knowledge receptivity. Yet the government voice that speaks most places financial accounting and issues of value for money before detailed discussions of what the transformations offered to schools might look like.

By contextualizing the revolutionary impact of ICT in such a way, the whole discussion is governed by the economic imperative of creating a workforce fit for the twenty-first century. The Global economy is discussed in such a way that other countries are mentioned only as reminders that they are a threat to the UK and that

only through a continual focus on using ICT in schools will the UK be able to sustain any economic success. This governmental voice drowns out all other possible voices, except one.

The other dominant voice in these documents is that of business, which becomes attached to the government one in ways that make separating them very difficult. Yet occasionally there are moments in the text where there is clear sight of the business voice, in particular at the end of the Becta 2007 document where a list of 47 'framework suppliers' is presented, along with contact web-addresses and details about the service focus of each business. This is a clear a picture of the 'public-private' partnership ideology and rhetoric that forms much of the discourse. Business tends to be presented as a place schools may go in order to get support, guidance and even off-load the burden of having to manage some of the technical and financial elements of the ICT initiative. Business is often presented by the government voice as a helpful and ever-present expert that will ensure, if invited in, that the ICT initiative works.

Business then becomes part of an elaborate narrative that presents ICT as a challenge, as technically and fiscally difficult, and potentially risky to end-users as well if not properly implemented. Throughout, ICT is constructed as a potential distraction from teaching and learning activity if schools try and make decisions alone. The Business community is presented as a necessary helping hand in this complex and threatening environment. Of course, the threat is not over-played; it wouldn't do to scare schools away from trying to achieve successful implementation of ICT and so the potential benefits are still an essential part of this narrative, but business is nevertheless presented as a support partner in this process.

As such, business has no direct speaking role in the discourse other than this. This is the primary way business is spoken about. Indeed in presenting themselves there is an attempt to present a very human, individual face to each business, so that the web-addresses given are in the majority of cases addresses of individuals whose names are part of the address. This makes the presented face of the business friendly and welcoming, a matter of contacting 'Simon Platt' 'David Sutton', 'Eugene O'Connor', 'Jennifer Gordon' and so on, rather than just the help desk or education

team of a corporate identity (Becta 2007, p20). There is in this a suggestion that schools are PC rather than Apple Mac users, in that Apple are not personalised in this way. There is no named representative for Apple Mac users.

This reinforces the idea that business is being presented as being a friendly partner with schools, a sharer of resources to help solve problems and maximise efficiency rather than major business partners with profit margins to extend. All this however is in the context of the discourse of value for money already noted. The ICT market is carefully presented through the agency of government as sharing the same goals and aspirations as the schools themselves. In turn, schools are invited, as we have noted earlier, to identify themselves with the motivations and objectives of business. Any potential conflict of values and objectives is largely absent as the discourse of the text merges the school with business values and objectives.

9.4.4 Step G: Different Versions of the Social World Co-Existing in the Text

The text presents a social world of school leadership being talked to by a government partner. The use of the word 'partner' is disingenuous as used in the text as there is a definite social hierarchy assumed. The government voice is one directing the school leadership and although the language is one of advice and non-statutory obligation, which reflects the idea that there is a partnership of equals, the text is one that requires school leaders enact what the government voice requests. It is an oddly curtailed and narrowly focused social world that these cohabit, one which encompasses funding issues at the institutional level of ICT projects going into schools, which is assumed to be one ensuring the standards required for economic well-being of the UK generally.

Yet this relationship co-exists with other social realities, which are acknowledged and sometimes even discussed but in terms of the text are less foregrounded. The home is a social presence that is acknowledged as being a huge potential resource for ICT use in schools. As before, it is a place of untapped ICT skills and knowledge, a site of ICT activities and resources that schools could exploit. The world of the home is narrowly defined in the text, one where ICT is an expanding field but remains mysterious. Young people and parents engage in ICT activity but are largely uncontrolled.

Reporting to parents is often raised in this context and the way it is presented suggests that there is discomfort in the idea of uncontrolled social spaces with powerful, unknown ICT usage taking place. The economic imperative being in the foreground throughout, this unease about homes being out of control suggests a worry or even suppressed hope that perhaps a way of using ICT that benefits the economic imperative (value for money, vocational relevance and so on) lies within these unmapped, anarchic territories. When discussed in the text this is done in an urgent tone, stressing the need of schools to begin networking alliances with these places as quickly as possible.

Schools are presented as social worlds that are regulated and audited and that ICT requires this more than ever. Schools are presented almost totally in terms of a managerialist paradigm where terms like 'good standard', 'effective', 'efficient', 'Impact of their investment', 'evidence gathered to support accreditation', 'self-evaluation framework', 'thresholds', 'assessment', exhaust the social world of the school. School leaders are identified as the key group in these organisations, which are discussed as organisations alongside Local Authority and business partners and government agencies, which implies that they're of the same kind. Learners are identified as those who need protection and who must receive twenty-first century learning but their presence is completely disengaged from the central concerns of the text where schools are conceived as policy running, reviewing, auditing and inspecting organisations playing a significant role in a challenging, threateningly competitive economic global context. Learners tend to be rather shadowy configurations in this larger plot.

Teachers are also 'bit part' players in the text, having the role of rather unfortunate messengers between worlds, the world of the school and its managerialist requirements and the homes of learners and their untapped and uncontrolled ICT expertise. Teachers tend to be characterised as moving between these two worlds with the purpose of ensuring that the directives from the school leadership are fulfilled and introducing the informally learnt skills and knowledge of learners from outside school into the formal learning zones of the school. The world of the classroom and of teaching practice is largely absent. Some are recognised as having implemented the requirements of the managerialist social world and also engaged

with the resources generated by learners outside the formal learning social space of the school, but these are exceptional individuals. In the text there are case studies, which are used as testimonies of excellence from this group used to exhort others to follow their example. Throughout the text however is a continual reminder that the social world of the teacher is one that rarely accomplishes this feat.

A globalised economic space is largely a vaguely defined but huge presence in the text. This is a space that includes the world of economic nations but specifies only some of them. It is a space that is characterised in terms of its threatening relationship with the UK. It is a space characterised by its potential ability to beat the UK in competitive economic enterprise. This view of globalised economic space is not defined but the text insists that this is a genuine and all pervasive threat. The discourse constructs Globalisation as a threat that is understood well by the government. From this constructed vantage point it claims that this looming social space is only ignored by the complacency of other perspectives that haven't grasped the nature of the imminent peril posed by this phenomenon.

Throughout there is a decidedly non-negotiable message being delivered and it underpins the text as a whole. This economic space then is a potential hostile space in which the UK finds itself and that there is no option but to compete within it. This is the world that is used to define twenty-first century learning. This social space is one that has notable characteristics according to the text. It is forever changing. It is fuelled by education and technology. It is entrepreneurial, competitive and carved up in to nationalistic blocks. Yet the national blocks are not obvious; throughout, the text refers to the UK and the schools of the UK, even though the audiences addressed by the texts are English.

This social space is also one of technological innovation, where ICT is seen as the defining technology bringing about enormous change. Homes, business and governments are being transformed by the technological innovations that, as with all things in this space, are sites of change and transformation. It is a dynamic futuristic zone of information saturated economic progressiveness and development. Schools are defined in terms of this presence and their massive investment in ICT infrastructures is presented as embodying the connection between schools and this

social space.

Another large social space that is a ubiquitous presence throughout the text is a virtual social space of on-line supervisory and supportive sites. These are registered at the end of each document and serve to expand the social spaces made visible in the main body of each document. These social spaces are identified only as web-addresses, sometimes introduced with brief descriptions of the function of these sites (e.g. 'Information from Becta' followed by the Becta safeguarding site address). The effect of this is to construct awareness of the unboundedness of virtual reality that the new initiative is introducing and attempting to manage. The addresses work to produce a 'walled garden' in the midst of the limitless virtual reality of ICT. This is an example of how the discourse treats the potential of the unlimited boundaries of virtual reality as something to be controlled and regimented. This emphasises the idea that ICT contains threatening, uncontrolled and dangerous elements that requires management. It is an idea that raises issues of safeguarding. By producing a social space that is like a "walled garden" the potential of the virtual world being ungoverned and unmanageable is avoided. The carefully limited number of virtual sites contrasts with the unknowably huge and continually growing number World Wide Web which; this is carefully not talked about. There is no message containing information about a social space far too anarchic and vast to be managed by such procedures. The discourse emphasises the need to control and manage and govern.

9.4.5 Step H: Imaginary Authors' Responses to those who Contradict

An opposing voice to this text would point to the exclusion of many other values and concerns of secondary school education in the text. The idea of an ungovernable, uncontrollable virtual reality is where contradiction might begin in terms of this discourse. It would suggest that the actual educational uses of ICT presented by this official discourse are too vague and thin to really inspire confidence that the author really knew how ICT was specifically going to enhance the educational outputs of these schools. The level of generality was too great to offer useful guidance and there was a sense that the author was waiting for innovation to emerge from the ubiquitous presence of ICT in schools in ways that are unpredictable and unknowable until they actually happened. This criticism is that the investment in ICT has been based on faith and hope. It has presented ICT as a defining new presence

in society and therefore has been assumed to be required in schools in a way requiring massive investment.

It links with the criticism that ICT is misunderstood by the initiative, that ICT's development, like other important technological innovation in the past, is not predictable. A greater historical awareness of technological enthusiasm and schools might have led to more circumspection. Just as the revolutionary claims made for radio, television, video recorders and so forth have led to more modest impacts than early adopters suggested in schools, there are doubts that ICT is any different in terms of the specific ways it can transform schools.

In response to this challenge the imaginary response of the author is likely to be that ICT is a genuinely different kind of technological innovation from those cited in the past. The parallel between ICT and television, for example, is just not sustainable. ICT is genuinely revolutionising society and the way people now live and work. The innovations of ICT are better compared to that of the invention of printing and the book. It is a hugely transformational technology with world historical implications.

This imagined author might add that how exactly ICT and education are to develop together is difficult to predict because innovation is almost by definition unknowable in advance. Yet the decision to invest and then set up systems of constraint and control is presented as non-negotiable. The focus on fiscal good management relating to ICT investment is vital and there is no surprise that it takes precedent over all other concerns. Nor is it surprising that as ICT becomes ubiquitous then revenge effects, those negate unforeseen effects of any policy innovation, also emerge (e.g. Cuban 2000). Safeguarding then becomes an issue only once the presence of ICT is established; this issue features so strongly in the text because there has already been success in establishing ICT in schools and society generally. It is an indication of the success of the policy.

The emphasis on the vocational aspect of secondary school is also something that is fully acknowledged in the text and is inevitable once the concern with the economic challenges of Globalisation and the Information Society are factored into the context in which schools operate. Perhaps one answer to the vagueness of the specific uses

of ICT and education in the text is that just the presence of ICT infrastructures is enough to ensure learners are familiar with the opportunities offered by ICT. Perhaps, ironically, areas where it is not so tightly specified how ICT is to be used educationally enables schools freedom to experiment and innovate without over centralised control mechanisms from the central government.

Rather than read the managerialism of the text as a constraint on realising educational values, perhaps they should be understood as a way of releasing schools from the burden of managing technologies and focusing instead on educational practices concerning teaching and learning. Guidance in how to properly use ICT for teaching and learning would, ironically, be exactly the approach that would ensure innovation is stifled.

9.4.6 Step I: Contrasts between Discourses

The discourse of ICT being a force for transformation is still a powerful discourse in this case study. Again, it is the discourse that is used to anchor confidence in the persistence in ICT investment. It is the discourse justifying continuation of the huge investment in the schools. Yet in this case study the discourse is contrasted with the managerialist discourse associated with the management and leadership of ICT, connected with both internal school management and leadership and the voice of external management and support. This discourse emphasises the threats that ICT can bring if management of the potential dangers is not properly facilitated.

This discourse contrasts with the first because it speaks about the dangers that the huge power and potential for change can bring about. The contrast is not one of direct opposition between the discourses but rather one that works through both agreeing on ICT's power but then each discourse emphasising different elements of that power. Whereas the first discourse infers only the positive potential, this second discourse makes explicit some negative inferences. However, this is a contrast that isn't contradictory. The second discourse is also about how ICT management systems solve the potential dangers of ICT. The contrast is used to re-emphasise the power of ICT and to make the point that it is capable of addressing problems arising from its potential dangers.

So, the discourse of financial threat is one that explicitly addresses senior leaders and school leaders in charge of the management of procurement of ICT. Implicit is the idea that value for money is something that can be achieved so long as knowledge about how to procure and manage ICT resources is handled skilfully. It is a discourse that implies that schools need support to do this well, and so is a discourse implying that schools are deficient in such abilities, but it is also a voice that carries the message that the required support is available. Again it is a contrast to the overwhelmingly positive discourse of ICT being a force for change because it does include dangers of ICT but by emphasising the support systems available it re-establishes the priority of ICT for schools.

The other contrasting discourse is that of safeguarding. This discourse links the need for security in this area exclusively to the requirement on schools to ensure that they have appropriate ICT solutions in place. The discourse again contrasts with the overwhelmingly positive 'ICT is a force for change' discourse by acknowledging inherent dangers attached to the technology's implementation in schools. Again, however, it presents the danger in terms of only existing if schools have inadequate ICT systems in place to manage the potential danger.

Contrasts between discourses are in this case study then presented to emphasise the need for different kinds of ICT systems, in particular management systems of fiscal and safeguarding elements, rather than to contrast a positive and supportive ICT discourse with one that is neither. In a way, the contrast is used to nuance and shade the positive approach to ICT found in these discourses rather than oppose it.

The analysis provides evidence that there are contrasts between ways of speaking about the different elements of the discourse. Teachers are talked about as needing more training because they are not fully realising the potential of the ICT resources. In this case study they are often linked with pupils in terms of their failures to utilise the full range of ICTs available. This contrasts with the way pupils are discussed. They are positioned as having untapped ICT knowledge and skills that schools are failing to recognise. Their informal learning, often spoken about as taking place at home, is something that is used to criticise not just teachers but schools generally. Reporting and assessment on pupil achievement is linked to this deficit model.

Leadership and management of schools is spoken of differently from teachers in general. Leadership and management are given roles in shaping the successful implementation of ICT and this constructs a very hierarchical view of how policy implementation happens. It is this group that is spoken about as needing to recognise the role of business in ensuring the successful use of ICT; the crucial concerns of safeguarding and value for money are also addressed to this group.

The discourse of leadership is therefore linked closely to that of business and both are in turn closely associated with that of government. The hierarchical nature of this approach is clear: whereby pupils, teachers and the home are largely spoken about in terms of having things done to them (e.g. receive new CPD, be better assessed) these three discourses are spoken about as having a proactive role. Yet there are also criticisms of the failure of leadership of management and learning in schools; there is strong emphasis on the need for this group to rely on business expertise to ensure that the ICT is successfully used and maintained in schools. The focus on procurement and value for money is used to signal a deficit in most schools' ability to manage these issues. In this respect there is a continuity between the ways teachers are spoken about and the way school leadership and management are too. By insisting on the need for agencies outside of school to ensure the successful management of ICT the discourse subtly undermines this group.

ICT is spoken about as carrying a threat to schools. Evidence for this was a significant addition to the way ICT was spoken about in this case study compared to the first. The risks that ICT carried were about value for money and safeguarding children. Yet ICT was also spoken about as being the solution to risks. This contrasts with the way teachers, for example, are talked about. Talk about ICT omits any blame, refuses to talk in any way about the fact that it is ICT that in itself has brought new threats into schools. This ensured that ICT was spoken about as something that was still inescapable and necessary to schools, but in terms that were less about its potential for transformation and more about its capacity to problem-solve. This was particularly the case when ICT's safeguarding risk was being spoken about. Contrasted with other elements in the analysis, such as teachers, the potential for criticising ICT for carrying these identifiable risks was not spoken about as being a fault of ICT.

The potential blame for introducing such risks was omitted from any discourse of ICT. Instead it was displaced, and became spoken of as a potential deficit of teachers and school leadership and management. Once positioned like that, ICT is discussed as being the solution to the potential failure of school leadership and teachers to manage the threats. This contrasting application of risk and responsibility found in the way these different groups were talked about results in ICT being criticism-proof.

9.4.7 J: Points where ways of Speaking Overlap

There are overlaps between these discourses. The wholly positive way of talking about ICT is largely comparable to the way in which both government and business are discussed. Government is spoken about as endorsing the ICT policies and there is no criticism at all about the way government has acted in relation to the ICT policies. Business too is spoken about as having a wholly benign role to play. Where a perceived failure of partnership building between business and schools is identified, this is spoken about as being no failure of business. There is some overlap between the way schools, teachers and pupils are spoken about too. They tend to be spoken about as problems for ICT, business and government. So, for example, it is the failure in expertise on the teacher's behalf that holds back the development of ICT use to its full potential in formal educational settings.

All the groups are spoken about in a broadly managerialist way. Efficiency is a key value that is applied to all the groups. It is largely in terms of the way each is talked about as being efficient or not that hierarchy can be perceived. This overlapping approach helps account for the way the home and pupil's informal use of ICT are talked about as being inefficiently utilised, understood and exploited. It is when the home and non-school based ICT use is talked about in this way that the dominance of this techno-economic approach is highlighted and seems particularly limiting.

9.4.8 Step K: Comparisons with other Text to Assess how these ways of Speaking Address Different Audiences

Larry Cuban speaks differently about these different elements and in so doing highlights the different presumed audiences being addressed by these texts (Cuban 2000). Cuban is writing in the USA and is concerned to speak about schools, for

example, as having cultures that resist innovations based upon claims of technology. This contrasts deeply with the way schools are discussed in the case study where schools are talked about as having to adapt and change in order to become more efficient in what they do.

A different audience may well be one that understands a different narrative or one that sees future possibilities differently. These audiences, not addressed by the text as it is, need not be assumed to be different groups. Teachers and school leaders, policy makers and consultants may well presume a different narrative, one that requires a different way of talking about teacher and learner use and understanding of ICT in schools, ways which might talk about political and cultural values as well as techno-economic ones. Keri Facer, for example, speaks to a different audience when she attacks the idea that technology will transform learning (Facer 2007). Her criticism of the BETT show addresses an audience that is seeking to challenge the dominant discourse found in the case study where she writes:

'BETT is the world's biggest education technology trade show. It runs for four days in January each year in Olympia and attracts thousands of teachers, advisors, consultants and others to view the stands set up by a whole range of different 'technology providers' and policymakers. This year, a particularly prominent stand on the ground floor had banner posters saying 'click and teach', 'turn up and teach', 'no preparation required', 'quick curriculum delivery'. It was the epitome of the idea that educational problems and complexities could be 'solved' by rapid technological quick fixes - in this case, the sale of sets of slides with curriculum content already included in them. It was mobbed by teachers every day' (Facer 2007).

Facer contrasts the approach she found at the educational trade show with results of educationalist researchers, including herself, who find education and teaching more complex than that assumed by those presenting the 'rapid technological fixes', citing work by Shulman and Fisher on the complexity of teacher knowledge (Shulman 1987; Fisher et al. 2006). Facer speaks to a different audience, one that comprises of teachers and educationalists who seem to want to engage with these complexities rather than what she calls 'producers of technology for education' (Facer 2007). She writes to an audience interested in a different relationship with technology. When she asks, *'What is the alternative to a 'selling' relationship between ICT and education?'* she is addressing a wider audience attitude than is assumed by the discourse in the case study. The audience of the case study discourse is one that 'assumes a lack of

professionalism on the part of educators – and is predicated upon a view of education as a set of simplistic mechanistic relationships...’ where as Facer’s is one that seeks to find a relationship that isn’t about producers and consumers, instead is one that redefines the relationship between educators and producers.

Similarly, Cuban’s text talks about Globalisation, economic competition, the stress on vocational objectives for schools and the prime role of ICT in schools differently than they are talked about in these texts. Examining ICT being introduced into schools in the USA Cuban is writing to an audience of academics, teachers, school leaders, policy makers and consultants and speaks of the USA’s ICT policy in a way that disputes the claims developed in the texts here. The discourse of techno-economic priority is one that, like Facer, he challenges.

In writing like this of schools and ICT policy, both construct an audience permitted to question key assumptions in the case study. They therefore construct a very different kind of audience from the one the case study text has created. Teachers are not talked about in terms of deficiencies that need to be addressed by further training, as is the case in the case study, but are instead talked about as experts in schools and education capable of enacting critical, often negative, engagement with ICT policies. Cuban talks about them as resisting the agenda of what he labels ‘techno-enthusiasts’ or ‘techno-reformers’. Facer similarly discusses teachers positively and stresses the complexity of what is required. In much of the research literature about the use of ICT for learning a more positive and less threatening emphasis is given. For example, there is considerable interest in social software and socio-cultural perspectives which is ‘...largely about making more opportunities for the user to publish and communicate. It is about uploading rather than downloading. About coordination, rather than delivery. So, for learners: it’s about more audience, more collaboration, more resource’ (Crook and Livingstone 2008, p30).

Selwyn and Grant (2009) write that, *‘The past five years have seen the popular portrayal of Web 2.0 in evocative terms of knowledge arising from Smart Mobs (Rheingold 2002) and following the Wisdom of Crowds (Surowiecki 2004). Education and learning is now felt to be a technology-supported matter of a collaborative We-Think rather than an individualised concern of what ‘I think’ (Leadbeater 2008)’*

(Selwyn et al 2009, p3). Marc Prensky (2001) writes about how social software has changed students so that *'...today's students are no longer the people our educational system was designed to teach'*. It is clear from these and many other examples that a different discourse and a different audience for ICT and learning is available but not found in the case study.

Cuban talks about schools as places with a developed culture capable of resisting any attempt to impose change via technology. He talks about schools as having long histories. He talks about ICT as being merely the latest of a series of presumed technological innovations that would alter schools and education. Unlike the case study, ICT is therefore talked about in an historical context, as are schools. Cuban's text historically contextualises what in the case study is presented ahistorically. Cuban's text therefore includes elements, such as historical context, that are omitted from the case study. In speaking in this way of its various subjects it gives permission to the audience to question and doubt. In so doing he constructs an audience that is no longer one reading for certainty and affirmation but rather one that may well be destabilised in its ideas about the issue, and more cautious about what in practice it may do. Cuban deliberately constructs an audience sceptical about the claims of the dominant discourse found here.

In the examples of Facer, Crook and Livingstone, Prensky et al mentioned above, the contrasting texts oppose Cuban's rather pessimistic view of schools and technology by presenting technology as being transformational. But in these texts the discourse is not at all linked to the techno-economic. In emphasising changes to what students are becoming, as explicitly found in Prensky, the discourse of transformation is connected to principles of self-fulfilment.

9.4.9 Step L: Terminology to Label the Discussion

As in the first case study, many of these ways of talking are consistent with discourses that have already been identified in the course of the thesis. References to techno-economic issues, Globalisation, Knowledge Economy, Information Society, Managerialism and so forth have already been explained. What is new to the discussion is more direct terminology relating to fiscal audit such as 'value for money' and 'investment'. These are labels for a direct cost accountancy focus in the

text, which has been revealed as being very prominent. The fifteen discourses of the previous case study are all also present to some extent in this case study. However a further three discourses have been identified as playing a prominent role in this second case study. None are missing from the first case study although the foregrounding of the three new ones has the effect of placing the others more into the background. The development is not trivial, in that it provides new detail, but supports rather than challenges earlier evidence that techno-economic discourse dominates.

Here is a list of the fifteen discourses of the previous case study, which are also identified in this case study.

- Education is vital for the Knowledge Economy
- ICT is vital for the Knowledge Economy
- Education is vital for the Information Society
- ICT is vital for the Information Society
- Education is vital for Economic Globalisation
- ICT is vital for Economic Globalisation
- Educational institutions should adopt Managerialist practices
- ICT enables Managerialism to operate more effectively
- ICT is a force for change
- Teaching can be improved (an idea linked to discourse of Information Society)
- Learning standards can be improved (an idea linked to discourse of Information Society)
- Leadership can be improved by ICT (an idea linked to discourse of Managerialism)
- More ICT investment is good (an idea linked to discourse of Knowledge Society)
- Participation can be improved (an idea linked to discourse of Globalisation)
- Pupils are disengaged (an idea linked to discourse of Information Society)

The further three discourses that have been identified are:

- ICT requires value for money

- ICT requires good investment
- ICT requires safeguarding

9.4.10 Step M: Where and When these Discourses Developed

These further three discourses originate from the established presence of ICT in Secondary schools. The case study covers the last five years of the ICT policy of the New Labour administration. The documents forming the text of the case study concern themselves primarily with issues arising from the presence of ICT in schools rather than issues about how to introduce them. The value for money focus links with the high financial costs of the policies described in earlier chapters. It also links with the managerialist aspect of the education policies as discussed by Ball. Ways of talking about procurement, staffing, training and management and leadership, as well as partnership with business were throughout used to address the identified failures of schools and teachers to fulfil the transformational potential of ICT. They have been identified as playing a significant role in the discourse of ridicule that Ball identifies in his policy sociology. This is the discourse that speaks with derision of old service style public service. The three new discourses identified further place the discourse of schools and ICT policy firmly in the techno-economic realm and omit any reference to other realms.

9.4.11 Step N: Description of how they have Operated to Naturalise the things they Refer to

The case study's text naturalises its references through carefully presenting things as facts by not admitting doubt and by closing down debate. The text is careful to exclude elements that might disrupt the careful narrative flow that such a naturalised factual account requires. It works through clearly signalled routes so that its audience is able to easily determine a coherent and closed structure. Elements that might cause incoherence, disfigure the smooth progress of the story, introduce inexplicable or contrary facts are therefore not included in the selection.

Additionally, it adds to the sense of reality and activity by arranging its elements as data, reporting them as the outcome of rigorous research and objective, bias free observation and scrutiny. The use of fine-grained detail also adds to the impression of truth being presented, of there being a level of detail that confirms the reality of

what is claimed. There are, as we have seen in previous chapters, several accounts of the policy that has put ICT into English Secondary schools that differ enormously from that of the official view, including different views about the economic context, which is so crucial to this case study text. These contrary views are excluded and an 'official' line is repeated throughout the documents making up the text in order to increase their coherence and make the other voices not merely 'voices off', unheard and silenced, but also largely unthinkable, as being contrary to the realistic world view being naturalised by this text.

A key element in the organisation of the text is the way it ensures that there is a story that can be easily followed by an audience. The simplification of elements to fit this need for 'followability', so that ICT is unquestioningly a 'revolutionary technology', that ICT skills are an 'absolute requirement for economic viability' and so forth, also contributes to the naturalisation of the discourse. Different elements become fused through their roles in the overarching narrative so that it becomes difficult not to think of them all hanging together in a coherent bundle. By tangling each element together the discourse makes it difficult to see how one could remove any element without destroying the overall coherence. In this way the discourse creates a sense of naturalness, of everything fitting together neatly like a hand in a glove. An example of this is in the way ICT is talked about as being a solution to the risk of safeguarding children. This is an easily followable point because the way it is talked about omits to say that the risk is one brought into schools by ICT. If this had been included then there would have been a possible conflict of attitudes being presented towards ICT. The story of ICT would be saying that it was both a risk and a solution. By refusing to say that ICT is what causes the safeguarding risk a non-conflicted and followable story is constructed.

Another example of this idea is the 'vocational' strand that runs through the discourse. It is so closely aligned with the view about the economic need of the UK in the context of Globalisation, as understood in the text, that to question its place would threaten to de-stabilise the cluster of elements it is rooted in. The narrative makes a clear and followable coherence by telling the story of how Global economics requires ICT skills, which in turn requires all schools to teach ICT skills and therefore invest heavily in ICT. To have an alternative educational objective

intrude to counter the vocational with a non-vocational educational purpose would threaten the closed and well-formed narrative. It would open up the narrative to different elements that wouldn't so easily point to the conclusion justifying massive and ongoing investment in ICT. The point about different educational objectives cannot be argued within the text, because the very mention of an alternative view would threaten to dissolve the hegemonic stamp and naturalised status of the narrative itself. So it is excluded completely, and the narrative on offer becomes official, natural and obvious.

The different voices help to naturalise the discourses too. So, for example, the voice of the government is an official voice that suggests authority and legitimacy and responsibility. The voice throughout is assertive and presents a tone that invites confidence. By frequently referring to legitimising research to support assertions the voice is able to transmit a point of view as if it is a received wisdom, rationally justified, evidence based and co-opting academia. This way of speaking is concerned with narration, giving the official story of the transformational impact of ICT in Secondary schools. As such it speaks in a way that uses the resources of a realistic narrative. It excludes vivid or fanciful language, giving the impression that the narration is historical, factual and as such trustworthy and reliable.

The voice achieves this effect of being factual by sometimes reverting to report mode. Organising its subject matter in such a way, it gives the assurance of an official report. The language remains objective in its register, removing any subjectivity in its speech and thus avoiding any thought that what is being said is in any way merely someone's opinion or impression. Throughout the text the vernacular is absent from the text, except in a minor case of quoted comments from various individuals. These individuals are usually school representatives whose quoted comments are placed strategically about the text to endorse the points being discussed. In this manner, the official and authoritative objective voice of the text is given the seal of approval from speakers outside the realm of officialdom, giving the dominant voice even greater authority to speak and continue to speak. And of course in so doing it is given greater authority to insist on being listened to.

However, this voice is often joined by a more urgent way of speaking using a

different register and tone. This is a register that requires immediate action. There are phrases like, '*it is important that you...*' used in order to communicate a sense of expectancy and urgency that requires attention in an immediate future, if not the present. This is an advisory voice that evolves into an instructional voice, even one that utters commands. This is not a way of speaking that is reflecting on a situation, nor authorised to narrate. Nor is it asking for endorsements from outside. This is speaking in order to bring about actions in the face of impending threat. These tend to be in terms of economic threats which, presented as objective reality, are not negotiable or ignorable (such as 'value for money' or Globalisation), or in terms of safeguarding threats. This way of speaking is still the voice of control and authority. It insists that it has answers and that if procedures are put in place and the steps outlined are followed then all will be well. It is a way of speaking that at one and the same time provokes anxiety and relief because it intrudes with a threat but also offers guarantees of problem eradication.

There are different voices combined to speak the discourse. One voice is narrating a factual, objective story that makes what might seem unsettling and unmanageable, such as the idea of continual change, technological innovation and so on, comprehensible and therefore reassuring. Alongside this voice is another one, urging immediate awareness of the impending dangers and threats that the situation holds, a voice which then reassures readers by presenting rigorous and stepped instructional guidance to offset the threats. By speaking like this the impression is created that everything that needs addressing in the situation is being addressed, that the narration and the solutions are exhaustive. The issue becomes normative: other issues and concerns *ought not* to be considered. The discourse also seems practical and no-nonsense: it speaks about potential problems and gives clearly set out instructions to solve them. A sense of reassurance and confidence in the discourse is therefore established and maintained.

9.4.12 Step O: The Discourses' Roles in Reproducing Institutions

There is continuity with the previous case study but the three added discourses focus on cost accountability and risk management. In so doing the discourses reproduce institutions of managerialist management. Schools are reproduced as managerialist institutions where their leadership and management are key areas of

the institution. The discourses play a role in constructing institutions along business lines. The school itself finds itself re-described in terms of a cost-accountancy, fiscal auditing model of managing ICT. The managerialism of the discourse is identifiable throughout in terms of the focus on fiscal review and audit, of standardised reporting, of the requirement of self-review using a centralised, government-owned process and the idea of formally identified procedures to ensure safeguarding. These in turn reproduce the central government's own institutional procedures of organisation in the schools they are addressing, reshaping schools as institutions in the image of the government.

This accounts for the absence of business from the discourse in terms separate from that of government. Government and business are reproduced in the discourse as sharing identical values and objectives. The institution of government is completely conceived in this discourse in terms of its business responsibilities. The UK is presented as a player in a Global economic context that is crudely about competing national markets and the government is its Board of Directors. Globalisation is presented throughout as an uncontested, un-theorised term in both case studies thereby preventing discussion about alternative ideas about what Globalisation might mean or whether it actually exists. The numerous references to businesses supporting schools in ensuring fiscal management and safeguarding are presented not only as being unified with the government agenda but help play a role in the discourse reproducing the institution of the school as a business. They are constructed as essential partners with schools with the effect that the boundary between school, on the one hand, and business/government on the other, is largely eroded.

9.4.13 Step P: Ways in which Discourses Subvert Institutions

The dominance of the discourse of economic need subverts institutions by omitting alternative conceptions of those institutions. In particular the school, government and home are the institutions that the discourse subvert. As has already been suggested, the very core objective of a school, the reason for having schools, is subverted by the omission of a core and central debate within the historical development of the English Secondary school. By excluding a powerful alternative vision of educational purpose from the whole discourse relating to the introduction of ICT into these

schools, the institution of the school becomes subverted.

By talking about schools like this the discourse erodes potential resistance to the hegemonic assumption that it presents. What is new in this second case study is the emphasis on managerialist approaches to the schools and the focus on fiscal and safeguarding threats emphasises the construction of schools as businesses in the discourse. In this way the case study shows how the institution of the school as an institution of public service is radically undermined by the discourse. These new discourses emphasise the approach to transformations of public service institutions recognised in Ball's work in policy sociology in education. Noticeable in this case study is the explicit use of commercial organisations being constructed as essential co-partners of schooling. In so doing the discourses subvert the distinction between market driven and public service driven institutions. But this case study also provides further evidence of the discourse of managerialism. The discourse of value for money is a discourse about efficiency and effectiveness, both key components of what Ball has called the 'logics and culture of new managerialism' (Ball 1997, p259). 'Value for money' also places the discourse in terms of a customer/provider relationship, subverting the image of the institution as a service and representing it as part of a market.

Understanding this provides evidence that the discourses erode any special features schools might have that distinguish them from business. This in turn helps identify the specific emphasis given to the role of leadership in the schools. The discourses help emphasise the role of the institution of headship in schools as the main carrier and embodiment of the new managerialism. Performability in terms of ensuring efficiencies, quality control and valuing 'innovation' drive the new discourses in this case study. The case study text, place a great deal of stress on modes of regulation and control that are required to ensure that the fiscal and safeguarding issues are properly addressed. The requirement that schools and Headteachers are required to operate with explicit market-entrepreneurial partners, both in terms of the external support service businesses recommended as well as government regulatory providers which also work within the managerialist and business framework, provides further evidence that the discourses of ICT in English Secondary schools subvert institutions once distinguished from business.

Another feature that the three new discourses in the case study have that undermines institutions is the implicit message that policies should operate in more or less identical ways in all schools. The provision of support is centralised and the threats presented are sufficiently generic to suggest a single message about what schools should do no matter what settings they are implemented in. The policies are presented as clear, abstract and fixed and therefore ignore local settings, resources and histories that may effect how policies are understood and implemented. The idea of schools as having distinct and unique characteristics is subverted by this approach. The discourses serve to homogenise schools; they become more like large chain store supermarkets where operating principles, aims and objectives are standardised.

Within this institution of the school is an ideal of the autonomous agency of the professional teacher. What the discourse of safeguarding constructs is a powerlessness of that group to play any autonomous role in the identified issue of safeguarding. Rather than recognise a role for the teacher in this issue, which might alternatively be understood as something arising in the domain of teacher-pupil pastoral relationship where the teacher is given a leading role in ensuring that the environment for the pupil is safe at all times, the discourse constructs the issue of safeguarding purely in terms of the partnership of the school institution with outside business partners. That this partnership is also part of the managerialist discourse that links school leadership, business and government together is the reason that this discourse of safeguarding is taken to undermine the idea of the teacher having an autonomous and central role. By undermining the institution of school as a service organisation the discourse also similarly changes the role of the teachers.

9.4.14 Step Q: Who would Benefit and who would be Disadvantaged by the Discourses

By stabilising the rationale for continued investment in ICT in schools the discourse benefits those with a vested interest in this. Therefore the ICT market and business community supplying the ICT and associated services benefits hugely. Linking ICT investment within a capital spending building programme also ensures that benefits follow to the building industry. By linking ICT investment with other investment opportunities the ICT strategy is opened up to a wider engagement with the business

community than just the ICT market. The link between these business interests and government advantages both business and government by securing a central role in the transformational agenda of the policy. There is a sense of mutual reinforcement in this second case study where the role of the strong state is to promote the role of the market. It is possible to infer that this close relationship benefits both business and government interests in a broader sense than merely schools and ICT.

The discourse reconstructs education as another standardised part of the market and therefore advantages those interests that would support this change. It also supports those who support what Ball labeled 'discourses of derision' (Ball 2006, p26) by emphasising the need for schools to rely on business expertise and managerialist culture largely identified with business rather than skills, knowledge and expertise residing in schools themselves.

The new discourses of this second case study place stress on the role of school leadership, especially in terms of the need for fiscal management and for a managerialist approach to school leadership. This stress is one that largely excludes all other members of the school community, although by acknowledging the need for consultation and basing decisions on good practice there is a suggestion that other groups might play a role in the development of ICT in schools. However, the emphasis, coupled with directives and practical aids that require whole school decision-making, ensures that leaders with whole school responsibility are given enhanced status and importance.

This is especially the case for those with understanding and responsibility for value for money procurement issues. This reconstructs the role of school leadership forcing them into new and narrower behaviour. There is also the stress placed on the need for advice to ensure that such matters as value for money are properly managed and administered. This suggests an advantage for advisors and consultants, who may be central or local government personnel or seconded into such a role by central or local government. Those groups advantaged by this are those who are prepared to be animated by the changing policy concerns of government and the educational market place. Actors like head teachers, teachers and technicians who feel that performance indicators specifying contracts between

themselves and employers are attractive and the link with powerful business expertise and support helpful may therefore benefit from the discourses. It may be that the discourse of value for money specified for investment in ICT may be perceived by some of these actors as having an over-spill to other areas.

Disadvantaged by this discourse are those individuals and institutions that may not have such a fiscal focus or whose knowledge, skills and interests are excluded from the discourse. This may include teachers who have good knowledge of their subject specialism, for example, but whose knowledge of ICT and its application to their subject is less secure. ICT generalists, who may have technical knowledge of ICT but not be so secure in their subject specialism may well be advantaged in such a context where leadership is emphasising the need for ICT knowledge as a priority. This may advantage ICT technicians. Given that a large part of the discourse relates to the procurement of ICT infrastructure and links it with safeguarding, it is possible that this might prove a burden to teachers.

The way that the ICT policy is talked about advantages those people who are the post holders of institutions with responsibilities for those areas foregrounded in the discourse. So, for example, budget holders and those in posts of safeguarding are potentially in positions of influence. Disadvantaged may be those with responsibility for non-vocational teaching and learning and ICT because of the omission of their area of influence from the discourse.

The way that the organisational issues are talked about in managerialist terms will also clearly advantage those who are in positions of control. Professionals, who require and prefer autonomy, so that they are able to use personal judgment, are disadvantaged by this discourse. Given that Secondary schools are largely made up of discrete subject departments, which historically have each tended to have different cultures, it may be that some subject areas feel more advantaged and disadvantaged than others. Similarly these schools each have different overall cultures. A school used to high levels of autonomy will be disadvantaged by the discourse whilst another with high levels of managerialist control already in place may not be. This point links to the standardisation of the additional discourses. The provision of external, standardised business/central government agency support

systems undermines the autonomy of independent, bespoke school agency. School agents who thrive on contingency and ad hoc problem-solving are disadvantaged in a discourse that seeks to remove such approaches.

This last point leads on to a more general observation, which is that the discourse introduces homogeneity to school culture. Any attempt to preserve the diversity of different cultures for schools in the Secondary system may be disadvantaged by having this one way of talking about ICT policy. Diversity of cultures in schools is threatened by having a single way of talking about ICT policy dominant in all of them, given that ICT policy is positioned as having a transformational effect on all aspects of schooling.

In so doing, the discourse attempts to establish hegemonic status for ideas which have historically been just part of a broader range of possibilities. The discourse takes a definite and specific approach to what it thinks schools are for and in so doing attempts to dis-empower alternative points of view. Ideas and practices connected to the idea that schools have important non-vocational rationales are therefore likely to be disadvantaged in respect to how far this discourse establishes itself. This relates back to the point made earlier: people working in ways that contest the ICT discourse are likely to be disadvantaged. For example, art and drama teachers tend to develop cultures that value autonomous approaches to teaching and learning and would therefore find the way ICT was being talked about disadvantageous.

It is a discourse that also, ironically, requires scrutiny and control throughout, elements that can be stifling to innovation. Although there will always be exceptions, the heavily weighted top-down managerialism may well disadvantage the innovative use of ICT in schools, an irony already noted earlier. The focus on safeguarding also introduces an element that may well disadvantage risk takers who wish to widen the participation in ICT led learning. Bringing such an issue to the foreground threatens to encourage risk-averse practices in schools. The safeguarding issue was an unforeseen (or at least, previously unacknowledged) consequence of introducing ICT into schools, and supervising the issue may introduce risk averse practices as a further unforeseen consequence of this strategy.

A further group disadvantaged by the discourses is local external government, as opposed to central government. The central government and business are external regulatory partners but a key external partner for this sector that is disadvantaged by these discourses are local authorities. Local government and rudimentary democratic structures are removed from the discourses. The advantage to market-entrepreneurialism that the discourse introduces also disadvantages organisational regimes that Ball's policy sociology has labelled 'bureau-professional'. Those working in this sector of schools and education with values and cultures of service rather than entrepreneurialism are disadvantaged by the discourse of corporate performance-related accountability. Importantly, the idea of education and schools as having special qualities that distinguish it from business are eroded, and actors working to remain distinct from business and enterprise culture are therefore disadvantaged.

9.4.15 Step R: Supporting and Discrediting these ways of Talking

What has been described is largely a univocal approach about each of the objects speaking in the text. Schools are largely managerialist processes generating vocational expertise for the UK economy. Leadership and management are the key group speaking and been spoken to in these schools. Potential groups who may disrupt the discourse of schools, administrative and teaching staff and pupils, are largely hidden and silenced. When discussed it is in terms of occasional good practice but largely in terms of how progress is still required. Claiming 'good practice' is the exception not the rule supports this. This tight organisation of the discourse supports the naturalness of this way of speaking about schools, and helps provide an impression of normality and acceptability.

To discredit this approach would require listening to opposing views from critical literature and from excluded groups. Opinions questioning the vocational purpose of schools, coupled with a different understanding of economic realities and Globalisation and Post-Industrialism, would all disrupt and to a large degree discredit any attempt to present the discourse as uncontentious. It would also be damaging if contrary ways of talking about the nature and role of ICT were visible.

Similarly with the voice of ICT generally, the government, the home, teachers, pupils

and parents, all of these are forced by the discourse to exclude non-economic, non-managerial elements. All of them are spoken about in terms of the preoccupation of value for money within a context of the UK's economic need in relation to the need for a workforce having a twentieth century skill base, which is in this discourse predominantly to do with being able to use ICT well. That school leadership is given a huge explicit and implicit role in the discourse, being by far the group that speaks and is spoken to most of all in the text, results in the fact that the other discourses are less prominent and tend to serve the purpose of merely consolidating the overall thrust of the discourse as a whole.

Attempts to discredit these ways of talking have been largely about challenges the assumptions on which these discourses rest. Because these assumptions are techno-economic these attempts have mainly been in those areas. Economic assumptions about Globalisation, about the nature of the economic reality, about Post-Industrialism and the future have been subjected to intense scrutiny in attempts to remove the assumptions driving the discourse. Kumar, for example, is an example of this approach. Grint and Woolgar have been equally strenuous in their attempts to undermine assumptions about technology, as has Cuban's essential critical work. Ball has similarly written critically of the assumptions governing managerialism. Yet there is little evidence that this has succeeded. Ironically, perhaps by focusing on techno-economic assumptions the critics have merely succeeded in fixing techno-economic assumptions as the only relevant assumptions.

9.4.16 Step S: Linking the Discourses

The effects of linking the discourses has been to present a unified vision within the ICT policy. It has constructed an ICT policy discourse in such a way that government, business and ICT are indissolvably linked together with a common purpose and vision. The link between government and business is one of a unified economic purpose, and is spoken of throughout as having a shared view on economic realities, visions of the future, visions of schooling and so on. Schooling is linked to the same discourse with the effect that schools are seen as extensions of government and business purpose. The effect of this unified way of talking of schools is to produce a managerialist driven organisation whose objectives are entirely determined by the discourse. ICT is spoken about in terms of being the

powerful technology that will bring about the efficiencies that this way of talking requires.

The linking up of the discourses serves also to omit different ways of talking, for instance about schools and about ICT. And in turn this linking of discourses not only serves to omit other ways of talking but also has the effect of omitting the speakers of alternative discourses from the policy. So pupils, teachers and homes are either omitted or permitted only when talked about using the dominant discourse.

An apparent consistency is presented through the linking up of the different discourses. This constructs an apparently self-contained, rational and non-contradictory way of speaking about schooling and ICT, which are taken as rhetorical signs of objectivity and legitimacy. The discourses are linked through the emphasis on regulation. The regulation is external, coming from central government but also linked to business. By including the business link the discourses provide evidence of external decentralisation. The discourses link entrepreneurial and corporate culture. The links also serve to intensify this shift in value and culture by presenting a coherent set of discourses that all talk about this school sector and ICT in terms of excellence, effectiveness, quality and the logics and culture of an embedded new managerialism. The links import and disseminate policy discourses in a way that unify the promotion of entrepreneurial values and a culture understood as a discourse of quality borrowed from the private sector that foregrounds market forces, commercial management models and quality improvement.

9.4.17 Step T: Reproducing or Challenging Dominant Conceptions

The case study has provided evidence that the dominant conceptions attached to the ICT policy discourse have been reproduced and emphasised. Throughout, accountability has replaced professionalism. A discourse of regulation, evaluation and scrutiny are strongly reproduced as part of the entrepreneurial, performative conception embedded in the policy discourse as a whole. The study has shown how the managerialist organisational approach is being robustly continued. In particular, the explicit contractual connections being made between schools and business are invigorated. A discourse of schools and homes being externally managed loosely from central government using a range of partners from business is shown to be a

continuation of the techno-economic hegemony established in the first study.

What this second case study makes very clear is that there has been no challenge to this hegemonic position. The specific issues of safeguarding and financial value for money are discourses embedded alongside the discourses identified and established in the first case study. The case study clearly identifies a continuation of the discourse undermining non-economic accounts of schools and homes and the actors within them. If there is development of the discourses found in the first study rather than just reproduction it is in the more overt connection between schooling and business exemplified in the area of value for money and safeguarding in ways discussed earlier.

Noticeable in this second study is the assumption of the link between schools and the externally driven managerialist 'remote-control' mechanisms residing in government and business. The hegemony of the techno-economic is presented as an unproblematic discourse and reproduces those elements of a general education policy within the specifics of the ICT education policy that Ball has made familiar. The increased use of private business in educational procurement and management of ICT in schools, the imposition of commercial criteria, the weakening of local government and of local democratic structures by a combination of ignoring the role of local government agencies alongside the proliferation of business and government agencies are all uncontested elements of the discourse analysed in this second study.

The combination of performance related systems of funding, explicit in the discourse of 'value for money' that is a key element in this study, alongside the continued dissemination of managerialist culture leading to and expressing standardisation of modes of regulation and control at all levels is clearly central to the discourse of 'safeguarding' and shows how the hegemony of the techno-economic identified in the first study is developed further in this second one. That these are not contested shows how the hegemonic status of the discourse has been well established and embedded.

9.5 ADDITIONAL STEPS

Additional Steps to Banisters' CDA

As in the previous case study, methodology developed for this thesis adds two further steps to Banister's stepped approach. The first will mobilise Bell's theory of axial principles and separate realms. The second additional step will be to apply Wodak's perspective, which would examine how the discourse might have changed through time.

9.5.1 Step U: Applying Bell's Axial Principles

The discourse examined in this case study is clearly dominated by principles of efficiency. Applying Bell's framework shows that it is a discourse rooted in the techno-economic, thoroughly embedding a managerialist process in the heart of everything, seeking to maximise outputs from inputs in every sphere and ignoring and silencing principles of the polity and cultural realms throughout. The immense presence of the value for money agenda couples with the systematic audit machinery it introduces, both in terms of the required proposal to 'self review' the use of ICT using the official Becta self review framework, the 'ICT Quality Mark' process, but also in its sustained review and audit mechanisms and use of standardised reporting and data to support future efficiency. Its use of school leadership and management is completely organised and presented in terms of the managerialist idiom focused on the objective of maximising efficiency of return on investment. This is important in showing these discourses are economic not political.

For example, the language of efficiency runs through the text, where benefits are understood in terms of '*...better value through aggregation and consistent terms and conditions*' (Becta 2007, p17), a statement repeating almost verbatim on page 4 of the same document, where '*...more targeted support...*' will use '*...better access to up-to-date performance data and pupil targets*' (Becta 2007, p12), where 'improvement', 'better' and 'increased' become the key words in the discourses' drive of the axial principle of Bell's techno-economic realm, efficiency. What has been labelled 'managerialism' is the only organisational process of the discourse. The establishment of measureable, quantifiable targets and accompanying

mechanisms for ensuring maximum efficiency is the subject matter of the discourse.

Schools are spoken of in terms of a discourse of efficiently organising resources to maximise output, all outputs are quantified in ways that allow for measurability and scoring. In this way the discourse exemplifies the need for quantification of all elements to enable comparability. With such elements in place, efficiency is something that can be given the gloss of objectivity and fact rather than merely subjectivity. However, the very idea that everything in the discourse can be subjected to some kind of comparability and that judgments can be made, somehow, in terms of enabling the greatest efficiency, is all the realm requires to be firmly included in Bell's techno-economic realm.

Throughout there is the insistence that the market suppliers '*...understand the needs of schools*' (Becta 2007, p17). The techno-economic realm is therefore imagined as being the same realm in which schools, school leaders, teachers and so forth are actually also found.

It is important to note that by applying Bell the procedure highlights *absences* that otherwise might be missed. Bell's 'cultural realm' sheds light on what the alternative voice might be, and how much is lost by this policy discourse of ICT in English schools. The ideals of self-fulfilment, and of principles that cluster round this value, are removed. Even where there are references to student enjoyment and personal development, which signals that the discourse of the techno-economic has not managed to remove all remnants of other realms, it is important to note just how marginal the language of the cultural realm has become.

Applying Bell shows the subversion of issues in the discourse, how they are relocated from one realm of Bell's framework to another. So, for example, where references to the cultural realm are found they are placed within an overwhelmingly techno-economic context. What this does is acclimatise the audience to interpreting even cultural discourses in terms of the techno-economic. Discussion of effective teaching, which might be expected to begin discussion about learner enjoyment and personal development, quickly turns away from engagement with such issues and instead becomes a rather muddled discussion of the need for better systems of

accountability and assessment of teaching and learning, which immediately turns the discussion into one of managerialist process rather than one interested in self fulfilment and expansion of being, and about the efficient use of ICT, involving asking how far *'...the four principles of best value (challenge, compare, consult and competition) have been applied'* (Ofsted 2009, p5).

Discussion of pupil achievement in terms of levels has been naturalised to this techno-economic discourse. The failure of any references to cultural realm values except cursory references to the motivational impact of ICT on learners, that are then used to discuss teacher failings and the requirement of better ICT investment, suggests that the discourse is unable to accommodate the other realm at all.

The point of Bell's approach was that Bell thought that the techno-economic realm, though important, was not the whole of society. Applied to education a similar point is being made. The discourse of the techno-economic realm is overwhelmingly present, to the extent that other realms are largely missing. What this shows is that the development of ICT into schools has become one completely dominated by techno-economic principles. In so doing Bell's schema shows that crucial dimensions of the cultural and the political have largely disappeared from the discourse of education and English Secondary school education in particular. In effect Bell's scheme shows how education has become part of the techno-economic realm and that the policy to place ICT into schools has been a major factor in this development. The unique status of computing, now understood as ICT, has been attached to a specific realm of discourse in a way that has made other realms largely silenced.

Bell's schema introduces the cultural realm and the political realm as separate from the techno-economic. By applying Bell, the emptiness of these realms is highlighted. The democratic deficit is clearly seen. There are no references to the political structures in the discourse, highlighting the hegemonic assumption that politics has no role in the policy. This throws light on the oddness of the discourse that has a role for government that is not political. The government's role is subordinate to the marketisation of the educational and in the ICT policy discourse is shown as taking a managerialist role alongside business. Its role is to ensure commercial, entrepreneurial market based values are instantiated and does this by eliminating

political values from the discourse of ICT policy. Similarly, by applying Bell, the discourses of a cultural realm are also eliminated from the policy discourse. As in the first study this highlights how the hegemonic policy discourse has successfully reduced the range of discourses it uses. It also shows how strange the hegemonic discourse is in that it has established an education policy without discourses of self-fulfilment and democratic power.

9.5.2 Step V: Prevalence of Discourses Over Time

The documents that make up the text of this second case study appeared in the years 2005 to 2010. They therefore represent a development of the discourse studied in the first case study, allowing us to register the prevalence of the discourses over time. The different context however has brought into consideration new elements and different points of emphasis.

This new study takes place at a time when ICT's presence seems established in the English school system. This is indicated by the way the documents are not so much about the potential benefits of ICT and the need to invest but a shift to discussions about what to do with the investment already made, in particular avoiding risks associated with ICT. The idea of ICT being associated with risks was not a concern in the first case study, which indicates how the discourses developed over time, changing the focus of the introduction of ICT from one of unlimited potential to one of risk.

The economic imperative is developed over time in this way; in the earlier phase it was exclusively to do with vocational education in the context of Global economics and the requirements of a new kind of schooling for the Knowledge Economy and Information Society of the twenty-first century. To this has been added the economics of the ICT systems themselves as they impinge on the economics of running schools. This new, more localised economic concern adds to the overall dominance of the techno-economic presence in schools and education.

9.6 DISCUSSION

This second CDA has confirmed that the dominance of the techno-economic

principles in English Secondary school ICT policy has continued.

The coherence of the discourse has increased by talking about the maintenance of ICT in schools using the same discourse as that which established its presence. The document 'Making the Most of your Investment' (Becta 2006) is just about procurement arrangements and the economic and business element of ICT: *'In the past, many schools have purchased ICT products and services in a piecemeal fashion, dependent on funding to serve their immediate needs. This has not provided a consistent level of service or the best value for money'* (Becta 2006, p2). In this document it is recommended that because schools haven't the capacity to do so, procurement of ICT be handed out to external business partners: *'As the Government's key partner in delivering the e-strategy, Becta recommends that purchasing should not be done by individual schools but by a larger organisation, such as a local authority, regional broadband consortium (RBC) or purchasing organisation that can aggregate the requirements of many schools'* (Becta 2006, p2).

The threat of limited economic resource is subtly implanted in this type of document. Recommendations are framed by sentences such as *'To ensure that your investment in ICT achieves fitness for purpose and makes best use of finite resources...'* (Becta 2006, p5) and quotations from school leaders enthusiastically embracing this approach such as one announcing *'It has enabled us to check that we are getting value for money from our equipment, to enrich the curriculum and to see how to personalise learning through ICT'* (Becta 2006, p5).

The idea of investment in ICT is presented as a proxy for school excellence in itself, being linked to successful school assessments, external accreditation and reputation. For example in the Becta guidance document for school leaders (Becta 2008) we read that ICT might *'Improve and enhance the overall reputation of your school... inspire confidence from staff and parents, governors and learners in your school... celebrate your achievements and share your expertise with other schools... Inspire continual commitment across your school in the use of technology'* (Becta 2008, p4). Again these comments are supplemented by enthusiastic endorsement from a school leader, in this case one who claims that *'Certainly in terms of staff recruitment, the fact the school has the ICT Mark is something that I'm advertising,*

and publicising and I see that as a way of helping to recruit high caliber, high quality staff into the school' (Becta 2008, p4). The links between ICT investment, ICT accreditation and so forth focus on aspects of school value that aren't educational values. The emphasis on future economic reality is ever present, as when we read in what Becta calls 'an essential guide' ICT is positioned as an essential part of *'...an environment fit for the twenty-first century'* and *'...educational transformation'* (Becta 2007, p2). This economic discourse is explicit when in the Ofsted document we read that schools are being judged on their business acumen and being found wanting: *'Some of the schools visited did not apply the four principles of best value for purchasing and did not obtain good value for money from their investment'* (Ofsted 2009, p6). In the same document there is an emphasis on the impact on ICT and workplace and the IT industry where a link is made between gender imbalance in ICT work: *'Less than one quarter of IT graduates are women. This has serious implications for the IT industry, where just one in five workers is female. An e-skills UK report indicates that, in 2007, only 18% of IT and telecoms professionals were women and the number of female ICT professionals is actually falling'* (Ofsted 2009, p32).

This analysis has shown that, at least within this case, the economic agenda of the educational reform process is using the language of culture and politics as co-opted vehicles for its agenda. So, for instance, software is being developed and introduced into schools explicitly aiming to recruit target pupils into IT business: *'A survey of the girls attending the clubs indicated that 66% of them would be more likely to consider a career in technology as a result of Computer clubs for girls... this and the introduction of the new diploma in ICT from September 2008 may help to increase girls' participation in ICT...'* (Ofsted 2009, p33).

In the following passage it is implied that the excellent learning is caused by the emphasis on ICT, thus implying that the technology can bring about transformation: *'Throughout, ICT is explicitly linked to learning ideals that make it seem that they are identical. The curriculum is constantly under review and schemes of work are updated to ensure that teaching keeps pace with developments in the media industry. Schemes of work and associated learning resources are now provided only from the virtual learning environment, making paper printouts unnecessary. The*

focus on getting ICT to the learning has seen achievement at the college rise sharply to be in the top 10% of similar schools for the past three years' (Ofsted 2009, p35). But the key element to note is that what in a different discourse would be representations of educational value are in this being yoked to the economic. And in this study it is noted that whereas in the first technology was a potential solution to deficits located in schools, now it a solution to its own deficits as well, as we see when we read of technology as bringing a threat, *'...learners from the age of 14 upwards with a wide variety of knowledge, needs and vulnerabilities in their use of technology'* (Becta 2010, p4) solved by the same technology; *'Becta's PIES model is an effective framework for approaching safeguarding strategy across learning provision. It offers a simple way of mitigating against risks through a combination of effective policies and practice, a robust and secure technology infrastructure...'* (Becta 2010, p4).

It is noted that by 2006 ICT had become a large presence In English Secondary schools. As we have seen in earlier chapters, by 2006 the huge investment in the policy centrally had ensured that ICT had become, in the words of the Ofsted document, 'ubiquitous.' The focus of the discourse is therefore about managing the established presence.

The case study is not a discourse of emergence. It is used to manage the presence of ICT rather than establish it. The same way of talking about schools, schools management, teachers, pupils and homes continues. Government and business's symbiotic relationship constructed by this way of talking is also shown to have been continued. The application of Bell to the CDA has provided evidence that the previously missing domains, the cultural realm and the political realm, continue to be omitted from the policy discourse.

New discourses of 'value for money' and 'safeguarding' are introduced to those familiar from the first study. These elements are new to the overall policy discourse but are talked about in the same way as everything else is, as being constructions of the techno-economic realm. They join the discourses found in the previous study, extending the techno-economic reach of the policy discourse overall rather than replacing it.

The CDA has shown that schools are constructed in terms of managerialist concerns and the maximisation of efficiencies. This links evidence about the respective roles of individuals within schools. School leadership and management are talked about as managers of a shop or a business, where opportunities for cost efficiencies and risk management are foregrounded. Pupils are constructed as not being fully exploited, as customers might be in a business setting. Teachers are constructed in terms of needing further training in ICT to deliver the potentialities offered by the technology. School ICT is constructed as having enormous potential that is not being fully exploited but this familiar way of talking about it is joined by the additional concern of its risks and costs. These are talked about in terms of the way schools need to manage the concerns. These are clear examples of the 'discourse of derision' that Ball discusses in his policy sociology. What this shows is that this derision is not just a discourse for establishing the presence of ICT in schools but is also used to maintain and develop the original discourses in a context where ICT is overwhelmingly present.

In this way the CDA has shown how ICT is constructed in these policy documents in such a way that it provides self-sustaining reasons for its centrality to the discourse. If it is a risk, because it is expensive and brings extra safeguarding threats into schools, it is also a resource for minimising these risks. ICT is the technological fix required to solve threats ICT might bring. The circularity of this situation shows how the discourse is constructed to absorb discontent and prevent alternative discourses. The CDA has therefore shown that there is no change in the way ICT is talked about as something necessary and unquestionable. In this its hegemonic status throughout this period is confirmed.

The application of Bell's schema throws light on the cultural and political discourses that are excluded by this dominance of the techno-economic. The expansion of the ICT infrastructures into society generally could have been talked about in political or cultural terms but are wholly discussed in terms of the expansion of business opportunities for exchange.

It is the submergence of Bell's cultural realm that is perhaps most interesting given that this is an educational discourse. The absence of notions directed to 'self-

fulfilment' is a clear signal that these documents are not accommodating different ideas about the purpose of education but is very definitely constrained within the narrow confines of the techno-economic. Through applying Bell's framework there is a clear sense that the educational discourse is overwhelmingly directed to efficiency. Its overt principle is that of efficiency. Where the idea of education as an investment may have had metaphorical resonances in other discourses more open to cultural and political principles, in this discourse the notion of 'investment' is given a literal economic reading. Throughout the focus on value is in terms of value for money rather than self-fulfilment and/or equality. It remains a controlling dimension to the whole discourse.

The CDA provides overwhelming evidence that a discourse has been constructed that only talks about the economic requirement for the schools. The CDA has shown that a once familiar ongoing debate about education's objectives, one that gives the cultural realm an important role, is absent in this context. The case study shows that the policy guiding the introduction of ICT into English Secondary schools is ignoring the political and cultural values.

The narrative of the policy documents recognises that the enormous investment is still not matched by evidence of comparable levels of success. It is possible to infer from this that the focus on the fiscal is a distracting tactic. The emphasis on the official, standardising language of control mechanisms and measurement avoids the challenge that values from the other realms might raise. The cursory acknowledgement of the motivational power of ICT threatens to lead the discourse into considerations that are best understood in terms of the axial principle of 'self-fulfilment' rather than efficiency, but the discourse curtails this swiftly, switching the subject matter from pleasure to standards, which then introduces an extended discussion about the management of necessary measurement and control mechanisms.

The case study has shown that between 2006 and 2010 the particular individuals in the case study in charge of introducing ICT into schools were working within a discourse that was exclusively techno-economic. This has answered two research questions, one as to whether there really is a dominance of the techno-economic

principles in the educational discourse regarding ICT in English Secondary schools, and two, whether the techno-economic realm, governed by the principle of efficiency, dominates the educational discourse at the expense of cultural and political principles. It also gave evidence for answering a further question about the purpose of education and whether the policies introducing ICT into English Secondary schools had an impact on ideas about the objectives of schooling. The case study suggests that the discourse used is one that is overwhelmingly committed to an idea of schools being for vocational ends. In terms of Oakeshott's metaphors, it is a discourse of the market rather than the monastery.

9.7 CONCLUSIONS

The chapter has presented the results of a second CDA examining texts from a later period than the first study. Its methodology has been identical with that of the first study, being largely based on an approach developed out of Foucault by Banister but also drawing on other theorists such as Wodak and Bell.

It has concluded that the discourse examined is exclusively techno-economic. Political and cultural values are excluded from the educational discourse studied. This has in turn been connected to Oakeshott's discussion about the competing objectives of schooling in England, which presents education as being for either vocational purpose or for non-vocational, self-fulfillment purposes. The discourse of the case study is concluded to be exclusively concerned with legitimising schooling in terms of the vocational objective.

The second case study, having identified 'Value for Money' and 'Safeguarding' as two additional discourses to those found in the first, can be understood using the same six discourses identified in the previous case study. The Managerialist discourse is clearly identified in this focus on fiscal management and safeguarding. This can be seen in the way that safeguarding is characterised as an issue of managerialist process and organisation rather than, for instance, an ethical challenge. This is the discourse Gewirtz and Ball (2000) identified as being a core element of the policy reforms of the New Labour administration generally. As a consequence, it is not surprising that it features strongly in the educational ICT policy

under scrutiny here. The absence of ethical and even political dimensions is highlighted by the use of Bell's framework in the analysis; the systematic exclusion of those realms has been a key finding of this research. It is an example of how Bell's ideas can be used to enable excluded discourses to be made visible alongside the discourses that make up the policies.

The Managerialist discourse is used to generate a deficit account of teachers by creating the impression that expertise from outside agencies will be required to offset the safeguarding threat. By directing outside agencies into schools, the discourse creates a reality whereby teachers are unable to respond to the problem, and this deficit must be addressed by managerialist processes. The effect of this is that the discourse maintains the need for further economic investment, in this case from schools into businesses, by scapegoating teachers. Throughout, ICT is presented through the 'Technology as a 'magic bullet' discourse. This discourse is especially prominent in the area of safeguarding: here, ICT is presented as the solution to a potential threat (safeguarding) that, ironically, ICT itself has created. As already noted this circular logic ensures that investment in ICT is maintained: where a threat from ICT is identified, its solution is also located within ICT.

This accords with the discourse of 'Technology as a Magic Bullet', which positions all threats and potential negativity in ways that are amenable to an ICT-based solution. The discourse creates a perspective that excludes all other explanations and secures the centrality of ICT in relation to the ongoing development of policy. The fiscal processes required also links the Managerialist discourse with the 'Marketisation/Schools as Business' discourse, where efficient use of money and the organisation of procurement are explicitly linked to business models and the development of partnerships with businesses and other providers. Consequently, this second case study can be understood as developing and maintaining the six discourses of the first case study, but in particular foregrounding Managerialism, Marketisation and the idea of ICT as a Magic Bullet.

In the next chapter, the thesis will review its purpose and summarise outcomes in relation to the five research questions.

CHAPTER 10:

CONCLUSION

10.1 INTRODUCTION

This concluding chapter of the thesis reviews the purpose and summarises the outcomes of the work in relation to the five research questions. The chapter outlines the main contributions, discusses its limitations, summarises possible areas for further research and finally outlines the implications for educational policy and practice.

10.1.1 Reviewing the Purpose of the Thesis

The broad purpose of this thesis was to rethink approaches to ICT provision in English Secondary schools. The huge financial investment and the centrality of ICT in educational policy formation presented ICT as a very significant factor in this sector of schooling, in particular during the New Labour period spanning 1997 through to 2010. I examined the way these policies conceptualised ICT. In so doing the thesis examined how these policies constructed the educational purpose of this sector and the role of ICT in schools. It examined the way the New Labour policies drew on ideas from outside education and schooling to justify and contextualise their positioning of ICT as a central feature of their school reforms. The thesis asked what role this construction of ICT was being given in that reform agenda and how much this construction was due to ideological reasons that drew on general considerations rather than just educational ones. The thesis was therefore interested in finding out whether the policies introducing ICT were driven by a broader agenda than education and how far and in what ways the policies changed previous educational values and purpose.

The thesis therefore examines previous ways of understanding educational purpose in the English Secondary school sector. It also examines policy sociological considerations. From so doing the thesis's second purpose emerges: to make clear

that considerations of educational purpose and the formation of policies are hugely contested areas. However, when surveying the existing literature about the specific policies of ICT, there seemed to be an assumption about ICT and its importance that was shared by both supporters of the policies and those challenging them in various ways. The assumption was that there was a *technological* and *economic* superstructure that explained everything, and that ICT's importance was to be judged in these terms. My second purpose was therefore to suggest that this assumption was largely ideological and that there might be alternatives. The introduction of a sociological perspective developed by Bell and its application to this specific area of interest was intended to explore whether this might suggest alternatives, and as a consequence of doing this, to see if the framework was productive as an analytic framework.

Finally, I wanted to find out what techno-enthusiasts expected ICT to achieve and whether these expectations had been achieved. I also wanted to find out whether and to what extent ICT was being used as a symbol for something else, linking it to visions of the future, modernity and progress.

10.2 SYNTHESIS OF FINDINGS

The findings of the research, derived from the five research questions outlined in chapter one, are synthesised in this section. I examined the purpose of English Secondary schooling. I analysed the ICT policy introducing ICT into English Secondary schools and how this relate to schools' broader purpose, looking at what happens to education when ICT is introduced into English Secondary schools. I further investigated how policy influences this process, in particular looking at what the policies have been and how they were formed, how these policies are expected to influence practice and identifying what concepts are used to explain the influence of the policies. I also wanted to discover if these were Educational concepts, and if they weren't, how this made a difference.

10.2.1 The Purpose of English Secondary Schooling (RQ1)

The thesis has shown how the history of educational purpose has been largely

structured around a prevailing conflict of discourses, in particular discourses of vocational and anti-vocational educational purpose (Oakeshott's market vs. monastery idea) within a political context of democratic civil society. Inevitably this description is schematic but I have argued that it captures the contours of the English education system.

The thesis has therefore taken this binary division as a useful way of talking about educational purpose. The metaphors of schools as markets or monasteries were taken as labels for vocational and non-vocational orientations. The thesis provided an outline of the historical context of this division and made a case for saying that this conflict is ingrained in the history of secondary schooling in England.

It was through understanding the contrast and contest between these two visions of educational purpose that ideas about the curriculum being taught in these schools, the organisational structures of these schools, of examinations systems and issues of class, gender and so forth were interpreted. This work formed a key contextual frame for understanding subsequent chapters. However, it is also a division understood as being part of a historical debate, taking place within the development of schooling in England, the opposing values generating familiar debates about the role of the vocational and non-vocational purposes of English Secondary schools. Because of this, it is identified as a crucial distinction informing English Secondary schooling, as opposed to Secondary schooling generally.

The thesis is therefore not saying that educational purpose necessarily has to be conceived in terms of this binary opposition but rather that historically it is an opposition that has been enacted in England and is therefore a credible way of understanding educational purpose in the present context. The thesis has linked it with the historical development of the educational curriculum in England to a Puritan tradition as described by White (2006a). It has linked it to a political disagreement about education that has been important in the recent history of English Secondary school education since Thatcher's Conservative Government of the late 1980s and continuing with the New Labour administration from 1997 until 2010. It has importantly linked it with a political debate, connected with educational theorist and philosopher Dewey, about what the democratic context of modern education requires

the purpose of education to be. This has led the thesis to identify ideas of autonomy and self realisation as important aspects of educational purpose that have often been discussed as being explicitly opposed to vocational ideas of educational purpose.

The thesis has presented reasons for thinking then that this is an important aspect of the context for the introduction of ICT into schools. It has been presented as a site of a continuing debate and argument. Rather than being a neutral ground of settled, hegemonic agreement, educational purpose in England has historically been a highly contested site.

The thesis has suggested that all these considerations are highly important in contributing to understanding the impact of ICT in English Secondary schools.

10.2.2 The Relationship between the ICT Policy Introducing ICT into English Secondary Schools and Schools' Broader Purpose (RQ2)

The thesis has examined the policy introducing ICT into this educational sector. I have used Ball's policy sociology and applied it to key policies of the period of interest. This is an original contribution of the thesis, as Ball's policy sociology hasn't been applied to educational technology previously. Ball stresses how important it is for research into policy to engage with a broad 'landscape of the social' by locating policy within a complexity of relational social settings. I have used a socio-historical viewpoint to illuminate the cultural and ideological landscape in which the policies studied have been located. It was from this perspective that I engaged with the socio-historic formulations of Post-Industrialisation in order to locate the relationship of ICT with a broader understanding of its socio-historic relationship with society, modernity and education. It was from this perspective that I also engaged with ideological formulations about the purpose of English education and schooling. I selected my two policy case study texts using Ball's ideas of treating policies as incomplete, incoherent and unstable. Rather than take them at face value, and take the evaluation of them at face value, I asked those engaged in the policies to produce texts for study assuming as Ball does that variance of local commitments, contexts and resources will realise policies differently.

In so doing I have examined key secondary texts about ICT educational policy. Ball and other key writers have made clear the impact of these reforms on transforming the nature of public service in general and education in particular. There is considerable agreement in this literature that a new policy discourse has been mobilised for the purpose of public sector reform in England. The idea of discourse is highlighted in this approach to understanding the work of policy in a sector like education for the simple reason that, as Fairclough says, "*Much of the action of government is language*" (Fairclough 2007, p157).

In this case the discourse uses the language of efficient business transaction, managerialism, cost efficiency, privatisation, business, competition and Globalisation. Applied to education, this has changed educational discourse from one of 'service' to one of 'economics'. What is important for my thesis, and one thing that sets it apart from other educational technology work, is its critical perspective. In the literature of key writers such as Selwyn and Grint and Woolgar, for instance, this discourse is not related to the historical context of educational purpose for Secondary schools in England that my thesis has presented as being highly contested. This has important consequences for subsequent attempts to understand and critique the ICT policy as introduced into the sector.

One of these consequences is that ICT is constructed as having a necessary connection with the techno-economic discourse that has developed under the government administrations since the late 1980's in England. When related to the contested purposes of education the ICT policy discourse is not a neutral construction. The thesis argues that assumptions embedded in the discourse take one side of the debate about educational purpose. Seen from the position of the historical argument between vocational and anti-vocational educational purpose, the ICT policy is part of a discourse that is wholly vocational.

By relating the purpose of the ICT policy to the debate about educational purpose generally the thesis shows that ignoring anti-vocational ideals sidelines a historically important alternative construct of the educational context. It gives hegemonic status to the constructed bias of the policy discourse. The thesis has shown that alternatives to the actual policy discourse for ICT are required so that the

constructed reality of that discourse can be challenged. In other words, in identifying alternative ways in which ICT in Secondary schools could be discussed, this thesis makes an important contribution to expanding a way in which policy could be responded to and critiqued.

My thesis also contributes to sharpening the account of ICT's place within the dominant discourse. It relates the place of ICT to influential sociological constructions of modernity, in particular ideas about 'Post-Modernity' that even if they have little traction in sociology have been important in policy construction. It has also shown that the assumption of a techno-economic infrastructure underlying and explaining the whole of society, including education, is historically conditioned by assumptions based on Marx and Liberal economics, and that alternative assumptions should be explored.

The use of Daniel Bell's resistance to the idea of the economic infrastructure that he developed when producing his version of Post-Industrialism, the Information Society, is used in the thesis to offer an alternative theoretical understanding of the educational ICT policy discourse. The idea of a tripartite infrastructure of techno-economic, political and cultural realms with their distinct axial principles organising their development has been used to interpret the educational discourse in order to challenge the hegemonic perspective in the ICT policies that assumed the techno-economic realm was exhaustive.

An implication of this has been to produce an analysis of the educational ICT policy discourse that can discuss the historical context of the educational debate about contested purpose in terms of the different contested realms. This is original to the thesis. It argues that the ICT policy discourse, and in fact the general policy discourse of the period being addressed in the thesis, has been placed wholly in terms of one of three distinct realms. By doing so it shows that the techno-economic is neither exhaustive of all possible educational or political understanding nor should it be assumed to be hierarchically of prime importance. Bell's thesis about 'cultural contradictions' argues that the three realms are not arranged in any hierarchical order but are equally important.

The thesis has shown that by making new assumptions about the educational policy discourse ICT policy is not the inevitable consequence of realities about England's techno-economic need and the purpose of its Secondary schooling. It is linked to historical discussions about contested educational purpose. It is also linked to the reform agendas of government administrations during the period studied. The importance of a contestable theory of Post-Industrialism and the role of ICT in that vision and its interconnected features is foregrounded. It is that that makes up the dominant discourse, and a bias towards one side of a two-sided debate about educational purpose in this sector.

Finally, the thesis has focused itself on a very particular aspect of schooling and education, that of English Secondary schooling and ICT policy. In doing this it contests generalised ideas about educational ICT. By highlighting the particularity of English schooling and its purpose, implications of that history for ICT being introduced into those schools have been identified. However, the specificity of that history requires that other sectors and National identities will need to be treated according to their particular contexts. The thesis is therefore arguing that assumptions about the impact of ICT on schooling can't be made in isolation from the particular contexts into which it is introduced. The thesis therefore largely undermines any presupposed idea that technology can be said to be potentially beneficial without understanding the system it is going to be used in and being clear about its purpose. This has important methodological implications for work undertaken in this field.

10.2.3 Consequences of the Introduction of ICT into English Secondary Schools (RQ3)

The thesis has examined in detail the policies introducing ICT into English Secondary schools and discovered that these were part of a much broader general public sector policy reform agenda that was begun by the UK government administrations of the late eighties. The period of this policy reform under the New Labour Government was where the ICT policies in schools became very prevalent. The thesis has shown both the enormous number of policies designed to introduce ICT into English Secondary schools and the enormous financial expense of this process.

The general policy reform agenda of the New Labour administration introduced the techno-economic discourse that policy sociologists such as Ball identified as defining these reforms (Ball 2008). Schools were generally converted into institutions conceived in techno-economic terms. The thesis adds to this generally understood point by showing how the ICT policy was an illustrative part of this overall discourse.

However, the thesis identifies some elements of the discourse that specifically implicate education and schools. Ideas linking the economic reality of current modernity to a 'Knowledge Society' and an 'Information Society' were part of the explicit reasoning used in policy justification. The thesis shows that these ideas evolved from new conceptions of economic social reality, in particular with the contested ideas of Post-Industrialism. Schools, being places of learning, information and knowledge, were therefore sites of intrinsic interest for policies that placed ICT as the defining technology of a hegemonic techno-economic discourse.

In chapter three the thesis examined the actual policies and showed how schools were transformed to become ICT rich. The analysis of two case studies in chapters eight and nine traced this shift in terms of policies that were initially attempts to establish ICT in the schools and then about managing the implications of successfully establishing its presence. The case studies established that the emphasis of the policy discourse subtly moved from presenting ICT in terms of its unlimited positive potential framed by economic concepts (discussed further below) to one where ICT was a risk that required careful management. Schools' discourse around ICT transformed from one of unlimited optimism to one about offsetting potential threats.

Schools were initially sites where ICT was continually used to mobilise ideas of the vocational purpose of education. Policies introducing ICT into schools at the beginning of the New Labour administration in 1997 through to 2005 were largely optimistic about the transformational power of ICT. My thesis found no evidence that any transformation that may have happened was recognised or valued.

The application of Bell's thesis of the three distinct realms was applied to the case study, something that was not done before my thesis. In so doing the documents

produced by teachers and practitioners of ICT in Secondary English schools from this period, which were the documents that constituted 'policy' to them, were shown to be dominated by the techno-economic discourse. The suppression of the other realms, the political and the cultural, indicated that the introduction of ICT into schools was at least in part to do with the establishment of this discourse. Schools were introducing ICT and largely ignoring other powerful discourses of the kind that Bell identified as political or cultural. Bell's tripartite construct helped to show this. Critical discourse analysis can be argued to be good at revealing what's there, even if hidden. It may be argued that it is less good at showing what is absent. Bell's model draws attention to what is absent. The two case studies showed how the techno-economic discourses were able to co-opt terms from political and cultural realms.

The analysis argued that hidden within such terms were clear discourses of the techno-economic. The transformation of education through the use of techno-economic discourse was therefore revealed even when hidden. However, Bell revealed the hidden absences by providing two further categories alongside the techno-economic. Doing so revealed how the hegemonic discourse diminishes the breadth of discourses available by omitting these other realms. By using an approach that separated the realms out as distinct and potentially contradictory discourses, the thesis was able to connect the current policy discourse with the educational debate about purpose. Schools were adopting a view of educational purpose that was vocational and the ICT policy of this period was identifiable as helping construct this perspective. The vagueness of the actual purpose of ICT itself was also something that suggested that the ICT was being used almost as a symbol of the economic discourse, even if there was no evidence in the policies as they developed of exactly what ICT was so good for in the context of education that it justified such enormous amounts of money being spent on it.

The second case study in chapter nine showed how the first phase of optimism about ICT's transformational potential developed into a more cautious phase. Schools in this phase were more concerned with the risks that ICT brought to schools. Schools were conceived as business organisations that had to manage the risks that ICT brought to them. This was not something that had been part of the

case study of the policy's earlier phase. The risks were financial, conceived of in terms of 'value for money,' and also about personal well-being, conceived of in terms of 'safeguarding.'

By conducting two case studies it has been possible to identify a difference over time in the discourse of the policy. The first study identifies a phase in the policy where the establishment of ICT in English Secondary schools was the primary aim. The second study of documents from 2006 to 2010 identifies a distinctly different set of priorities developed in the context of the saturation of ICT in these schools. The entire study involving the two case studies covers the whole of the New Labour administration's time in office. The thesis has therefore identified the two phases of ICT policy that characterise this administration's approach to ICT in English Secondary schools.

The thesis therefore found that the ICT policy under scrutiny shifted over time and was able to explain what this shift entailed. This second case study reflected the reality that ICT was by 2005 a large presence in Secondary schools. There was no longer a need to foreground justifications for establishing ICT because it had reached saturation point by 2005. The new interest in risk management and awareness therefore reflected the new context, which was largely about managing the successful establishment of ICT's presence to maintain its techno-economic discourse.

The thesis has shown that education has become defined and conceived of in terms of the techno-economic discourse that ICT policy uses. Schools have become places where this discourse has been introduced as if it is a neutral discourse about ICT and education. This has been possible because the contested values of educational purpose have not been presented in the discourse. Instead, one set of values, those of the techno-economic, has been used to suppress alternatives. ICT policy has been used as a way of presenting the values associated with vocational purpose as the only values relevant to education and schooling in the English Secondary Sector. Even when a comparison between the two phases of the policy were examined it was shown that over time the terms of the techno-economic realm were changed, from establishing ICT to managing it, but despite this neither cultural nor political

realms were introduced.

By using Bell's tripartite realms as a framework for discussing the results of the CDA, the thesis has shown not only what the discourse includes but also what realms are excluded by the discourse. The analysis represents the situation in a way that doesn't assume that some kind of techno-economic discourse exhausts all options for thinking about educational purpose. The analysis thus allows for a counter argument that isn't about an alternative economic purpose for these schools, but one that raises the possibility of a cultural or political alternative, completely separate from any economic conception.

10.2.4 How Policy Influences the Process (RQ4)

10.2.4.1 The Policies

The ICT policies examined were those in the period between 1995 and 2010. Although secondary literature assumes that some policy documents are more important than others my study did not select its documents to reflect such a presupposition. I explain policy formation and selection as undertaken here in the following sections.

10.2.4.2 How these Policies were formed

The thesis has examined the process of policy formation and has been influenced by the work of Ball and his 'policy sociology'. Ball's approach makes very clear that policy making and implementation is a process that involves not just the government officials and researchers, ministers and civil servants who are engaged in thinking up policy but is equally about the interaction of the ideas of practitioners such as teachers and school leaders and other individuals who have roles in implementing the policies. For this reason the thesis has engaged in case studies that have been shaped by groups of practitioners and teachers working in the English Secondary school sector who have specific responsibilities for implementing ICT policies. It has worked with the documents that they have used in the process of policy implementation, and so has been able to examine how policies have been understood, formed and implemented in a way that studies that are not based on policy sociology could not.

10.2.4.3 The influences of these Policies on Practice

As already noted, the thesis has found that ICT policies have promoted techno-economic discourses in the settings studied. This has become the dominant discourse for both education and for ICT. Schools are largely conceived in terms of the discourse of the techno-economic and alternatives are largely omitted. Educational values are completely dominated by this discourse, which has shaped the Secondary school sector in England. The concepts used in the discourse are discussed below. The thesis has found that policies concerning ICT in education policy have been totally associated with the discourse.

The thesis therefore has found that ICT's role in these schools has been defined completely by the general reform policy discourse of the period studied. ICT, unlike other subjects, was largely a new subject that only became introduced as a subject in schools in this wave of policy making. The phenomenon of policy 'hyperactivity' that characterises much of the way policies were produced at this time, characterised by a constant bombardment of new policies ensuring that the notion of continual change prevailed, meant that ICT has been a very high profile feature of the reform agenda and one that has largely had the role of impressing on schools the idea of newness and the future that underpinned the more general policy discourse.

The thesis found that the continuous reference to ICT in policies ensured that the dominant discourse was established and supported by a defining technology. Everyone, both in and out of schools, was encouraged to believe ICT was what the future modernity was all about. By examining the history of technology in schools by writers such as Cuban (Cuban 1996) this thesis suggests that such claims are consistent with claims made for earlier technological innovation, which were largely unfounded; and therefore these claims are open to critical challenge.

10.2.5 The Concepts used to Explain the Influence of the Policies (RQ5)

10.2.5.1 How do these Concepts make a Difference

The thesis has shown that concepts influencing policies are not all educational. As a result of the discourse analysis the thesis has produced six clearly defined discourses that constitute what I have been calling the techno-economic discourse of

the studied ICT policy. Each discourse has emerged out of the critical thinking I have done throughout and I have shown how they have been used to exclude other discourses carrying other values. Indeed I have shown that each is specific in how it has been used and how it is to be understood. So, for example, the analysis has shown that the discourse I have labelled Globalisation has taken a very specific and opponents would say ideologically skewed version of that term.

The six discourses are the critical terms that the thesis has uncovered. They have been identified as the discourses underlying a particularly powerful policy discourse. They are labelled respectively as Globalisation, Political Prophecy, the Knowledge Economy, Managerialism, Marketisation as a Business and Technology as a Magic Bullet. Several of these are familiar in accounts of contemporary economic and sociological institutional organisation. Globalisation and the Knowledge Economy, for example, are components of several studies of the contemporary economic context. However, what my analysis has shown is how the six components work together in the context of the ICT into English Secondary schools policy. In this they are like a syndrome, forming a particular formation of possibilities and constraints.

This collective aspect adds to some of the recognised discourses in educational ICT policies. For example, Larry Cuban in the USA has identified the 'political prophecy' discourse as a key discourse, but hasn't linked it to the other five. Similarly, Stephen Ball's policy sociology studies have shown some of the strands here but again not all of them. The ICT discourse is one that presents these six discourses as working together to manufacture consent. This is not to deny that each discourse has its own independent history and identity. The history of the development and use of the 'Knowledge Economy' discourse sketched in the thesis is an example of each having an independent identity. But the thesis has analysed each discourse as having a particular identity, with certain crucial features as well as being part of this cluster of discourses working together. What follows are salient issues that the thesis has discussed and studied that have resulted in identifying these six key discourses.

The identities of each discourse has been subjected to some historical analysis. So, for example, one contribution of the thesis has been to show the influence of the concept of Post-Industrialism on educational discourse of this period. Although many

sociologists largely dismiss the term as being too general and vague to be of sociological interest as a tool of analysis, work by Kumar and Webster have shown that it has been a concept that writers and thinkers about modernity have attached significance to. So its value here has been not as an analytic tool but as a category of discourse that is opened to critique. Another contribution of this thesis is to revisit an aspect of the idea of Post-Industrialism of Daniel Bell: a three-realm theory of axial principles. This work was important in the development of the discourses of the knowledge economy and information society, which make knowledge and information the new base of modern capital. However, a closer focus on Bell's approach reveals that this element of the work has been over-generalised by critics, who have excluded consideration of the principles that define political and cultural realms as separate from the realm of the techno-economic. In this way, the 'knowledge economy' as used in the salient policy being studied is taken as a singular discourse, developed out of particular historical sociological studies of a certain time that is used to intricately fuse with the other five discourses to control and constrain understandings and maintain and supervise consent.

The thesis also shows how preoccupations with the idea of a Global economic reality has been important to the policy discourse that is now predominant in Secondary school education. The thesis traces how this concept has fed into the discourse and has been used in a specific way to emphasise the idea of economic threat that Globalisation brings. The thesis recognises that the concept is one that is contested and constructed in various ways but how it is used in the discourse emphasises ICT's role in this new economic reality, emphasises the role of knowledge and information, and emphasises therefore a link between Globalisation and the need for an education that skills workers for this new world.

It therefore provides a vehicle for the idea of educational purpose being solely vocational, linking everything to the job market. It also emphasises competition between countries as a threatening feature, where the requirement to become skilled up for the twenty-first century is presented as largely a matter of survival. Globalisation is therefore presented as a competitive, cutthroat economic enterprise where foreigners are threats and failure to innovate to achieve the necessary transformations of this new world will result in dire consequences. Schools are

placed at the heart of this in education policy. ICT, as the defining technology of this situation, is conceived in terms of breaking down time and space barriers to markets in ways that were previously unimaginable. The policy pushing ICT into education is therefore one mobilising conceptions of schools as requiring updating to survive and positioning ICT as what it means to be updated. ICT policy in education is therefore conceived in terms that make it more than just an educational policy. It is *the* educational policy.

The thesis has argued that the ICT policy discourse introduces concepts of market economics, of producers and consumers, self-interest, and a shift to Lyotard's idea of performativity. Lyotard defines performativity as the best "possible input-output equation" (Lyotard 1984, p46). These concepts have suppressed other concepts such as 'service' thought of in terms of a 'professional-ethical' regime, of the 'social and community' understood as referring to interests that are alternatives to those of individual well-being. Business competitiveness is prevalent and the thesis provides evidence of the absence of concepts such as collaboration and support for others. This positioning of schooling in relation to markets rather than society has been achieved through, and helped to develop, the discourses of managerialism and marketisation.

The thesis has also pointed to the fact that the ICT policy has also been linked to the concept of the future. It has been part of the 'continual reform' policy process that the New Labour administrations have used. This suggests that continual reform is in itself part of the policy. The future, being something always new, requires this concept of itself as continually renewing. As I wrote in chapter four, this also emphasises the 'communicative texture' of the processes involved, where the language of the New Labour ideology is continually present as new policy. This has been created by a discourse of political prophecy, in which the stress is on a technological future where ICT is discussed in terms of immense transformational power and potential for change. This in turn is linked to a discourse of technology as a magic bullet. This discourse focuses on the 'technological fix', whereby all challenges and problems are presented as being solvable using the defining technology of the age.

The thesis has therefore argued that ICT in English Secondary schools is a construction of a general policy discourse that is techno-economic. The use of Bell's tripartite theory of axial principles has provided evidence that alternative realms to the techno-economic, namely the cultural and the political, are absent from the dominant policy discourse. The thesis has provided evidence that the New Labour administration of 1997 to 2010 has been largely responsible for this whilst conceding that certain elements of policy discourse were introduced earlier than this by a Conservative administration beginning in the late 1980s. It has shown that although ICT has been present in schools before the New Labour period it has been much more central to educational reform policies during this time. The thesis provides evidence that the construction of ICT in the policy discourse has enabled it to have a symbolic significance for the discourse as a whole.

The thesis provides evidence of the hegemonic status of this discourse. The historical context of this ICT reform is also used to provide evidence that the ICT policies have not been constructed in such a way as to include all the various constructions of educational purpose that were present before the policy reforms. In particular the ICT policy reform discourse provides evidence for a construction of education that excludes non-vocational, non-economic educational objectives. This holds true even after identifying two phases of the policy, the establishment phase and the saturation phase. Applying Wodak's idea of a comparative study of a discourse over time what has been identified is a difference within the techno-economic discourse but no development of discourses from the cultural or political realms. Bell's construct of three separate realms defined by different axial principles has been applied to show how the discourses involved in the policy are all consistent with the logic of the techno-economic realm. In so doing, the analysis has revealed what is absent in the policy discourses, which are discourses consistent with the logic of the realms of politics and culture.

10.3 CONTRIBUTIONS OF THIS RESEARCH

10.3.1 Contributions to Policy

The main contribution of this thesis is to research about educational policy, and

educational ICT policy in particular. The ICT policy has been analysed and has been found to be a particular and highly visible and well-funded part of the New Labour education policy reform discourse, which in turn is a particular case of what Ball has called a '*general policy reform discourse*' (Ball 2008).

The analysis has been a contribution to the education debates that have in the past been formed around the contrast between the monastery conceptions of schooling and the market conceptions of schooling. The inclusion of Bell has enriched the number of discourses available to discuss educational reforms of the future. The two realms of the cultural and political that are absent from the dominant reform policy discourse are potentially immensely rich as a way of thinking differently about education and schooling. They have also been an enormous and important presence in previous phases of educational development, as was argued in chapter two. So the findings of this thesis clearly indicate that any educational policy that restricts itself to a single discourse excludes two major realms, limiting its reach. By doing this, the thesis has noted a major transformation of the educational landscape.

Future work in these areas could take this analysis further by examining how an ICT policy discourse constructed with all three of Bell's axial principles might be represented. The findings of this research also help provide a theoretical framework that supports the findings of other critics of the techno-reform agenda, such as Larry Cuban in America, who have been subjected to the criticism that their work is under-theorised. The framework involves applying Bell's three realms, which both exposes what is omitted and is productive of additional discourses. This provides a framework that does not replace the dominant techno-economic discourse but rather is one that restricts its range of influence and allows the inclusion of the cultural and political axial principles their equal place.

A theoretical contribution arising out of this is the link between a particular historical discussion of educational values and the ICT policy discourses through the use of Bell's axial principles. This has the potential to introduce other values to ICT policy construction, such as those used in the debate about educational and school purpose characterised by educationalists such as Oakeshott and Pring. The thesis links to theories like those of Grint and Woolgar, which attempt to reconceive ICT as

something more like a text to be read. Their theories are potentially closer to axial values found in Bell's cultural realm than in the techno-economic. Their approach to change in ICT is much more like the idea of deepening understanding than in the techno-economic idea of replacing something with something else more efficient.

Another theoretical contribution of the thesis is the synthesis of Ball and CDA methodologies, as well as the market/monastery models and Bell and policy sociology. It has made connections between different fields, synthesising these different insights and showing how connections can be made. So, for example, the thesis makes a connection between Bell's theory of axial principles and the cultural contradictions he detects in modern societies and the Oakeshottian conflict between different values of educational purpose.

The thesis has also made clear the link between the ICT policy and the practices of policy making used by the government at the time studied. The New Labour administration entered office in 1997 and left in 2010. Therefore the policy analysis undertaken in the thesis covers the entire period in which this particular administration held office. The thesis has therefore made a contribution to understanding a major strand of that administration's educational policy.

It has contributed to showing the relevance of Ball's 'policy sociology' to a specific sector of education in the UK. It has also contributed to proving two case studies that give details of what the ICT policy is for practitioners and teachers during this time. The case studies have provided evidence that the techno-economic discourse is overwhelmingly dominant in schools represented in this study throughout the period studied. Over time the case studies have shown that this discourse has been consistently the construction for all ICT reform policies in schools. The case studies have provided evidence that this discourse has omitted other possible constructions that historically have been present in schools. The hegemonic status of this techno-economic discourse has therefore been established in the case studies.

The six techno-economic discourses that characterise these policies are consistent with what is found in much of the key literature analyzing the area of educational reform policy of this time, in particular within the work of Stephen Ball. What this

research offers which is new, however, is the close analysis of how these general discourses have been used in the context of ICT educational reform in the English Secondary school sector. The work can therefore be seen as a specific contribution to a more general thesis about educational policy reforms. The use of Bell's tri-partite division of realms is also original to this area of research, highlighting what an emphasis on the techno-economic excludes. In so doing the research provides a nuanced theoretical model for discussing the policy reform agendas, one that recognises techno-economic discourses but also suggests other kinds of discourse that could be developed, and so offers the possibility of join techno-economic concerns with cultural and political discourses that are currently excluded from the policy process.

10.3.2 Contributions to Research

The thesis firstly contributes to research in the field of educational ICT and policy. It firstly offers a theoretical framework for the work of Larry Cuban and his work on educational technologies. The framework is an outworking of the policy sociology of Ball, and so this is a second contribution the thesis makes. It applies Ball's policy sociology to the domain of educational ICT policy, which has not been done before. This will contribute to approaches to educational ICT research by substantiating Ball's claim that practice-orientated research often fails to take into account the policy context of the studied practices as when he writes, '*Policy is ignored or theorised 'out of the picture'*'. This is particularly the case in research about classrooms, about teachers and about schools, which treats them as free-standing and self-determining, as 'out of context' (Ball 1997, p265).

The research also contributes to scholarly work attempting to understand educational ICT in the contexts, respectively, of a general policy context, of ideological formations of Post-Industrialism and of a Spartan and reified binary understanding of the educational purpose of English Secondary schooling and education. This last focus is a contribution to advancing understanding of ICT within the context of a specific, particular sector of schooling and education.

A final contribution is to studies that consider educational ICT policy as it develops over time. By examining the policies over a considerable time period the approach

contributes to an anti-ahistorical approach to ICT policy research. This contributes to research that opposes what Ball has called '*... a distinct tendency of 'post-88ism'*'. That is, a good deal of policy research takes the changes introduced by the 1988 Education Reform Act as a ground zero in the history of education; anything happening before 1988 becomes a kind of unexplored pre-history, creating a Rubicon-like 'before and after' effect' (Ball 1997, p266).

10.3.3 Methodological Contributions

The first methodological contribution of the thesis is the application of Banister's Critical Discourse Analysis (CDA) to a field where it is rarely used. This shows the viability of a new way of doing research of that kind, and contributes to the limited body of work of this kind that's been done to date.

The second contribution is the application of Ball's policy sociology to a field where again it is rarely used. The third methodological contribution is the use of Bell to identify the missing discourses in CDA about society. Discourse analysis is usually used to reveal what the discourse hides. Bell is used to show what the discourse omits.

The justification for adopting Bell's theory in this particular case has been that it is an essential part of his own conception of post-industrialisation, the 'Information Society' that has been itself indirectly influential on the current reform policy discourse in schools. It is also justified in terms of reflecting the historical discussion about education value and purpose. The contested values are about contrasting an economic, vocational set of educational values and purpose with non-economic ones. It is difficult to see how this conflict could arise if everything was actually economic. Where would the contrast be? The methodology consists of a critique that assumes that politics and culture are not reducible to economics. The thesis offers an alternative approach to this idea.

The thesis also adopts a methodological approach developed out of an understanding of Ball's policy sociology. Ball talks about policy texts and policy in general as being a process of struggle and conflict of production (Ball 1994, 2008). The research methodology used in the two case studies invited the perspectives of

individuals involved in the implementation of ICT policy. The methodology recognised the agency of the actors in this process within the analysis undertaken. By using their choices, based on their own practice, rather than choosing texts the secondary literature considered important, the research reflected Ball's attempt to use policy sociology to open up *'new ways of talking about and conceptualising policy'* (Ball 1994, p109).

The implementation of Wodak contributes to developing an historical perspective to educational ICT policy sociology. This approach justified having two case studies and enabled a comparative study that established the findings about the particular changes through time that affected the discourse over the fifteen-year period investigated by the thesis. This is the base of the theoretical contribution addressing Ball's charge that policy sociology has tended to assume an ahistorical stance noted above, but is a methodological contribution because analysis of discourses over time has not been applied to educational ICT policies.

10.4 LIMITATIONS OF THE RESEARCH

This section discusses the limitations of the methods and theory employed by the research.

10.4.1 Practical Limitations

There were a variety of practical limitations on the research. The first limitation was the time period of the research. The research only covered a short period, from 1997 to the present. However, this period has been considered a key period for the introduction of ICT into this educational sector by many key commentators (e.g. Selwyn 2008).

The second limitation was the breadth of the documents selected. However, the selection was that of a case study sample of key practitioners introducing ICT into Secondary schools during the period analysed. The limited breadth therefore was taken as these individuals' construction of the policy. This was necessary to ensure the integrity of the case studies.

The third limitation was the specific choices made. The teachers and practitioners invited to take part in the case studies had to be people who would comply with the requests for information and also would have to be people I could easily contact and explain the project to. This wasn't always easy. Constraints of working in school environments, the difficulty of arranging ways of contacting them, constraints on how much time they were prepared to spend working on the project for me were all limitations. It was also not easy to think of ways of getting the kind of responses that would be useful to my research.

In order to overcome these limitations I restricted myself to working with a limited number of Secondary schools in North London. I was able to use my professional access to these contexts to contact potential practitioners and teachers involved in implementing, developing and forming the ICT policies in their schools.

10.4.2 Analytical Limitations

The scale of the case studies was small and this restricts the generalisability of their findings. The analysis was applied to a very distinct and small group, which was limited to a specific geography, time and number of people. Despite the case studies being small their integrity was established by following a recognised CDA procedure developed by Banister.

The analysis is also limited in that it only examined the written messages of the documents submitted for analysis rather than a multi-modal DA which would include for analysis the whole text, including pictures, lexicographical features and so forth. Although this is a limitation to the analysis I think that had further analysis been done focusing on such elements the original findings recorded in this thesis would have been strengthened rather than changed.

The limits of CDA are also analytical limits of the thesis. Theorists who reject discourse analysis would therefore not be convinced by the analysis here presented. Similarly, the use of Bell's axial principle theory is likely to be rejected by any unidimensional theorist convinced that only one realm is required to understand all social realities. However, although outside the brief of the current thesis, I think the productivity of the approach vindicates its use. Even trenchant critics like Kumar

acknowledge that there is power in Bell's approach. The thesis has provided evidence that the application of Bell's ideas has resulted in a richer understanding of the ICT policy being examined in the thesis than had the dominant alternatives been applied.

10.5 FURTHER RESEARCH

The thesis was limited geographically to studying ICT policy in a single national region. The number of participants in the case studies limited it also and they too were limited in terms of their location. Further research could widen the case studies by increasing the number of participants, broadening the geographical reach of the research, even extending it to look at different National policies. In doing this latter research a comparison between different National policies could be undertaken which would begin to show how ICT in education is affected by educational values more generally as well as those specifically directed towards ICT and its potential use in schools.

Future research could investigate how different National educational policies position and construct ICT. This might also offer scope for future investigation into how different national educational systems approach education and ICT. There would also be the possibility of further research investigating the history of technology and education, as found in for example the work of Tyack and Cuban (1995) in the USA, which might specifically investigate whether resistance to technologically driven changes to schooling are related to the different axial principles of Bell's competing realms.

Further to this, the thesis conducted its research over a particular period and coincided with the end of the New Labour administration that was so intimately connected with the policy. Further research might be conducted into how the policy is developed under a new government administration. This would test whether the new Conservative and Liberal Alliance administration retains the discourse or not. This would also further the research that is already in the thesis whereby the changes of the policy discourse over time are analysed. This is something that could

be periodically returned to.

The thesis also invites further use of the methodological application of Bell with CDA to understand the construction of social reality, in fields of education that are not necessarily to do with ICT and education. The thesis has shown that ICT has been positioned in terms of a techno-economic discourse of education. The question remains for further research what an ICT policy might be like in an educational discourse of politics or culture.

10.6 IMPLICATIONS FOR EDUCATIONAL POLICY AND PRACTICE

The thesis has shown that the current ICT policies in English Secondary schools have involved resolving a dispute about educational values and the purpose of schools by erasing one side of the dispute. An exclusive discourse of ICT as the vocational purpose for schools has been constructed. The discourse has been shown to use concepts and assumptions about economic reality, modernity and the future that erase independent political or cultural perspectives. Its voices are the voices of business and the technocratic manager, its axial principle is efficiency and its conception of reality is refracted through a very specific and narrow prism of globalised, market orientated, individualised and competitive economics. Six discourses have been identified that characterise these policies, all of which contribute to its techno-economic character. They are THE discourses of Globalisation, Political Prophecy, Managerialism, Marketisation and Technology as a Magic Bullet.

For the development of educational policy and practice that is capable of embracing a broader field, one that includes axial principles that are linked to democracy and self-fulfilment, the thesis provides evidence that there are omitted alternative discourses available. By identifying axial principles other than that of the techno-economic, using Bell has introduced additional resources for thinking about educational policy and practice. The thesis does not argue that alternative realms should be used to replace the techno-economic realm; rather, they should be developed alongside the techno-economic. Taking the notion of 'contradiction' from

Bell, who argues that the existence of different realms results in irreconcilable 'cultural contradictions', the thesis suggests that too much is lost to comprehensively represent education if the contradictions are removed by removing the different realms.

In the light of this the study's findings suggest that ICT itself might gain from being discussed in terms of principles other than the axial principle of the techno-economic realm. Rather than co-opting terms from other realms by giving them meanings that are legitimate only in the techno-economic, the study suggests that 'cultural contradictions' will be acceptable and developments in political or cultural realms will not be translatable into the techno-economic. The findings therefore suggest that the dominance of techno-economic approaches to both ICT and education are poorly justified and limiting.

The findings also suggest that in any education system reformers need to be aware of the system's historical formations in order to better understand the constraints and possibilities of that system. The findings provide evidence for non-economic factors to be considered when trying to implement a policy for improving education. This is a contribution of the thesis.

The thesis also raises serious consideration of how and how credibly the current dominance of the techno-economic discourse in education, and the massive investment in ICT in the educational system, is justified. The findings offer an original argument for questioning the policy: it does nothing to disagree with the idea of ICT being a defining technology linked in serious ways to new economic realities and so forth (even though it remains open as to whether the actual details are as the discourse presents them) but gives reasons for thinking that educational purpose is not exhaustively part of the techno-economic realm. Bell suggests that some of education can be constructed from within the techno-economic realm, but not all of it. The reason for investing in educational ICT as presently conceived is justified only to the extent that vocational outcomes are important.

The findings also provide evidence of how the policies submerge and efface competing voices, including those of pupils, teachers and parents, whilst giving

prominence to the voice of business, managers and governments. This suggests a democratic deficit at the heart of policy making in education. The findings also find that the removal of a professional-service model of education, replaced by a managerialist consumerist model, is linked to this democratic deficit. The thesis therefore provides evidence for thinking that a correction of these deficits will require engaging the excluded realms in future policy making.

Implications for those developing ICT and education policies need to take into consideration the three separate realms. Each realm will need to follow its own axial principles of development, irrespective of each other. Policy will have to incorporate all three realms. Conceiving schools as culturally fulfilling rather than efficiency maximising institutions is an option. Similarly, conceiving schools as politically good institutions may again conflict with requirements of efficiency and cultural development. Policy designers may be able to assume that these contradictions are parts of social reality rather than mistakes that need to be eradicated.

A broader consideration of the impact of time on educational ICT policy for further research would be to examine how the new governmental administration that replaced New Labour in 2010 develops the discourses of educational ICT, in particular looking at both the question as to whether ICT retains its central place in a techno-economic discourse and the related question as to whether the techno-economic discourse retains its predominance.

10.7 CONCLUSIONS

The thesis has examined the policies introducing ICT into English Secondary schools in order to produce evidence of what the dominant policy discourse is missing. The thesis has contributed to the literature critiquing this domain by showing that the construction of ICT in English Secondary schools is a techno-economic one that omits cultural and political discourses. It has provided a new conceptualisation of issues arising from these policies. Its novelty rests in the application of Bell's thesis of axial principles to the discourse of educational reform policy discourse. It also has engaged with Ball's idea of policy sociology by using a research

methodology that has a case study sample of teachers and practitioners involved in the introduction of ICT into schools in the period analysed providing what they take as being the ICT policy as the material to be analysed.

The thesis has analysed policy through the period of the New Labour administration. Two case studies have been undertaken providing evidence of the character of the discourse that is being used by the policy. It has provided evidence of how the policy has changed over time, moving from an early phase of optimism that focused on extolling the transformational potential of ICT in schools to a later phase where the risks associated with the successful establishment of ICT's presence in schools were the main focus.

It has also related ICT policy to the educational purpose of schools in the English Secondary sector and shown that these are important in understanding the way reform policy interacts with previous discourses and the concepts embedded in them. In particular the ICT policy discourse has been constructed in such a way as to omit discourses of non-vocational value from educational purpose. The thesis has therefore been able to show shortcomings of the policy, in particular the way it has closed down historically important understandings of schooling.

These contributions will be useful for guiding future research into ICT policies in schools. The thesis will be of interest to any researcher and practitioner of ICT in schools and for anyone interested in English Secondary school policy. It will also be interesting to policy sociologists. The application of Bell to the CDA will provide a model for future research.

The conclusion of the thesis is written at the end of the period of the New Labour administration whose policies have been so central to the focus of the work. The intense investment and support this government has given to the policies expanding ICT into English Secondary schools makes the demise of the administration especially interesting. If phase one of the introduction of ICT into this sector began with the Conservative administration of Mrs. Thatcher, the New Labour administration marks a convenient demarcation of its second phase. What will be interesting will be what that government's demise will mean for the policy and

whether the new administration will continue with the existing policy direction or not will test the hegemonic status of the discourse.

Six discourses have emerged from the analysis of the thesis. Discourses labelled Globalisation, Political Prophecy, the Knowledge Economy, Managerialism, Marketisation as a Business and Technology as a Magic Bullet have been identified as a techno-economic syndrome of discourses. Other questions for further research will be to study if they remain as a cluster of influential discourses in the future or whether fragmentation or recombination with other discourses will happen. As part of these further questions will be how change happens, whether they evolve into new formations of discourses or whether sudden rupture breaks them apart. Perhaps one of the six will become dominant; perhaps a new emergent discourse will emerge, perhaps from a different Bell realm. There is much to do.

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APPENDIX I:

NOMINATED DOCUMENTS – POLICY ANALYSIS: PART I

EDUCATIONAL ICT POLICY DOCUMENTS INCLUDED IN THIS RESEARCH	
YEAR	TITLE OF DOCUMENT
1997	Preparing for the Information Age: Synoptic Report of the Education Department's Superhighways Initiative
1997	Information and Communications Technology in UK School: An Independent Inquiry – NCET Information Directorate
1997	Connecting the Learning Society: National Grid for Learning: The Government's Consultation Paper, DfEE
2002	Connecting Schools, Networking People: ICT Practice, Planning and Procurement for the National Grid for Learning, Becta
2002	Transforming the way we Learn: A Vision for the Future of ICT in Schools, NGfL, DfES
2002	ImaCT2: Learning at Home and School: Case Studies, Becta, DfES
2003	ICT and Attainment: A Review of the Research Literature, Becta, DfES
2003	Secondary Schools – ICT and Standards: An Analysis of national Data from Ofsted and QCA, Becta
2003	Fulfilling the Potential: Transforming Teaching and Learning through ICT in Schools, DfES
2004	ICT in Schools: The Impact of Government Initiatives Five Years on, HMI – Ofsted

2005	Harnessing Technology: Transforming Learning and Children's Services, DfES
2005	The Becta Review 2005: Evidence on the Progress of ICT in Education, Becta
2005	Connecting the UK: The Digital Strategy, Prime Minister's Strategy Unit and Department of Trade and Industry
2006	Learning, Teaching and Managing with ICT: Funding Guidance for Schools and Local Authorities, - 2006 – 2007, DfES
2006	Transformational Government – Delivering the DfES Strategy, DfES

APPENDIX II:

NOMINATED DOCUMENTS – POLICY ANALYSIS: PART II

EDUCATIONAL ICT POLICY DOCUMENTS INCLUDED IN THIS RESEARCH	
YEAR	TITLE OF DOCUMENT
2004	Using ICT in schools: Addressing Teacher Workload Issues – PwC and DfES
2006	Making the most of your Investment in ICT - Becta
2007	ICT and Building Schools for the Future: An Essential Guide - Becta
2008	ICT Mark. A Guide for School Leaders - Becta
2008	ICT in Primary and Secondary Schools - Ofsted
2009	The Impact of ICT - Association of School and College Leaders (ASCL)
2009	The Importance of ICT. Information and Communication Technology in Primary and Secondary Schools, 2005/2008 - Office for Standards in Education (Ofsted)
2009	Harnessing Technology Funding 2009-10 - Becta
2010	Safeguarding in a Digital World. Guidance for Curriculum Managers, Teachers and Training Staff - Becta
2010	Safeguarding in a Digital World. An Overview for Learning Providers - Becta